

COMMUNITY BASED CORRECTIONS PLAN PLANNING STUDY

FOR THE

EXPANSION & RENOVATION OF THE MIDDLE RIVER REGIONAL JAIL

VERONA, VIRGINIA

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MOSELEYARCHITECTS

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SECTION I

Synopsis of the Required Number of Beds

I. SYNOPSIS OF THE REQUIRED NUMBER OF BEDS

A. SYNOPSIS OF THE REQUIRED NUMBER OF BEDS

This project is a proposed addition and renovation to the existing Middle River Regional Jail (MRRJ). The original jail was opened in 2006 with a rated capacity of 396 inmates. The current inmate population averages in excess of 700 inmates (June 2021 ADP of 650 with an additional 51 inmates on home electronic monitoring (HEM)). The projected inmate population is in the range of 1244-1283 inmates by the year 2029. This project consists of no rated capacity increase to the existing MRRJ. The project consists of a new medical infirmary, expanded administration area, expanded laundry facilities, and expansion of kitchen storage; expansion of the existing maintenance building for maintenance and additional square footage for an expanded warehouse as well as renovations and equipment replacement in the existing jail. The renovations include water heater and lighting upgrades for the entire facility, mental health administration, security desk in the existing lobby, visitation renovation, and food services storage. All components of the project proposed by this Revision to the Planning Study were included in the original Community Based Corrections Plan Planning Study dated December 23, 2019 as reviewed and approved by the Board of Local and Regional Jail at its September 16, 2020 meeting.

This project will provide much needed support space and facility infrastructure and engineering system improvements required as the current facility handles an inmate population over 150% of its rated capacity and that has experienced an inmate population peaking at over 250% of its rated capacity in years past.

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SECTION II

Direct Supervision

II. DIRECT SUPERVISION

A. DIRECT SUPERVISION STATEMENT

No new general population beds (maximum, medium, minimum, or community custody classification) are proposed as part of the project. A limited number of special purpose housing beds are included in the new medical infirmary to replace those lost to the renovation of the existing infirmary as it is renovated for mental health staff administration and treatment space.

The direct supervision/unit management concept is embraced by the MRRJ staff and management. Direct supervision is not currently used at the jail in the existing housing units.

Direct supervision links two elements to manage and produce a safe and secure jail for inmates, staff and visitors. The design of a direct supervision facility in conjunction with a planned inmate management approach has proven to significantly reduce negative inmate behavior and incidents of violence. Under the direct supervision concept the Officers are in the housing units, actively and progressively supervising the inmate population. There are no barriers present that prohibit the supervising staff from interacting with inmates and identifying problems in their early stages.

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SECTION III

Facility Planning Program

III. FACILITY PLANNING PROGRAM

A. SUMMARY OF SPACE REQUIREMENTS

- 1.0 Public Lobby
- 2.0 Facility Administration
- 3.0 Employee Services
- 4.0 Security
- 5.0 Intake/Transfer/Release
- 6.0 Classification Housing
- 7.0 Vehicle Sallyport
- 8.0 Community Custody
- 9.0 Inmate Records/Classification
- 10.1 General Housing - Cells
- 10.2 General Housing - Dorms
- 10.3 General Housing – Dorms – Future Bunking
- 11.0 Visitation
- 12.1 Education (Multi-Purpose)
- 12.2 Education (Multi-Purpose) – Future Bunking
- 13.1 Recreation
- 14.1 Medical Services
- 14.2 Medical Holding (Special Purpose Housing)
- 14.3 Mental Health
- 14.4 Mental Health Holding (Special Purpose Housing)
- 15.1 Food Services – Expansion
- 15.2 Food Services - Renovation
- 16.0 Laundry
- 17.0 Maintenance
- 18.0 Warehouse & Commissary
- 19.0 Central Plant
- 20.0 Magistrate
- 21.0 Police Booking

B. SPECIAL DESIGN CONSIDERATIONS

The program has been compiled to conform to applicable provisions of the Commonwealth of Virginia Board of Corrections Standards for Planning, Design, Construction, and Reimbursement of Local Correctional Facilities, dated March 8, 2018.

Consideration was given to the requirements of the 2018 Virginia Uniform Statewide Building Code, the current building code used in the State of Virginia.

Reviewers of this Planning Program should note that certain program components and specific spaces are listed but are indicated as “not used” or are shown with no square footage indicated. These components and spaces are existing to remain. The Facility Planning Program follows.

A. FACILITY PLANNING					JAIL ADDITION		WAREHOUSE MAINTENANCE
SUMMARY OF SPACE REQUIREMENTS ADDITION AND RENOVATION - JAIL							
COMPONENT	NSF Area	Grossing Factor	Addition: Component Total GSF	Renovation: Component Total GSF	Addition: Component Total GSF with OGF	Addition: Total by GSF with OGF by Function	Addition: Component Total GSF with OGF
1. Public Lobby				150			
2. Facility Administration	2,117	1.35	2,858		3143.7		
3. Employee Services	0	1.35	0		0.0	3143.7	
4. Security	0		0				
5. Intake / Transfer / Release	0		0				
6. Classification Housing	0		0				
7. Vehicle Sallyport	0		0				
8. Community Custody	0		0				
9. Inmate Records/Classification	0		0				
10.1 General Pop Housing-Cells	0		0				
10.2 General Pop Housing-Dorms	0		0				
11. Visitation				1,272			
12. Education (Multi-Purpose)	0		0				
13. Recreation	0		0				
14.1 Medical Services	3,650	1.4	5,110		5621.0		
14.2 Medical Holding (SP Housing)	2,064	1.8	3,715		4086.7	9707.7	
14.3 Mental Health	1,640	1.4		2,296			
15.1 Food Services - Expansion	2,800	1.2	3,360		3696.0	3696.0	
15.2 Food Services - Renovation				932			
16. Laundry - Expansion	2,920	1.2	3,504		3854.4	3854.4	
17. Maintenance	750	1.1	825				907.5
18. Warehouse & Commissary	2,720	1.1	2,992				3291.2
19. Central Plant	0		0				
20. Magistrate	0		0				
21. Law Enforcement Lobby	0		0				
Subtotals	18,661		22,364	4,650	20,402	20,402	4,199
X 1.10							
Addition GSF x 10% overall grossing factor (OGF) =			24,601				
Total Renovation Area				4,650			
Total Addition Area				24,601			24,601

NSF = Net Square Footage (useable space)

Grossing Factor = added area for circulation and wall area between spaces within a component

Addition: Component Total GSF = the total of NSF multiplied by the grossing factor in the addition

Renovation: Component Total GSF = the total of NSF multiplied by the grossing factor in the renovation area

Addition: Component Total GSF with OGF = the total of GSF multiplied by the overall grossing factor (10%) in the addition

Addition Total GSF with OGF

NO. OF SPACES = quantity of spaces needed for a particular space type

NET SQUARE FT. = Net Square footage of an individual space (useable space)

TOTAL NSF = total Net Square Footage (useable space) for a component

1. PUBLIC LOBBY - RENOVATION	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Renovated Area (new reception office)	1	150	150
TOTAL			150

2. FACILITY ADMINISTRATION - NEW	NO. OF SPACES	NET SQUARE ET	TOTAL NSF
Administrative offices			
Assistant Superintendent	1	120	120
Finance Director - Finance	1	120	120
Human Resources Manager - Finance	1	120	120
Purchasing Technician - Finance	1	120	120
Accountant/Technician - Finance	1	120	120
Accounting Technician - Finance	1	120	120
Watch Commander Shared Office - seats 6	1	287	287
Training/meeting room - seat 24	1	750	750
Mail Processing Room	1	160	160
Records Storage	1	200	200
TOTAL			2117

3. EMPLOYEE SERVICES	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to Remain			0
TOTAL			0

4. SECURITY	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to remain			0
TOTAL			0

5. INTAKE /TRANSFER / RELEASE - RENO	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to remain			0
TOTAL			0

6. INTAKE CLASSIFICATION	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to remain			0
TOTAL			0

7. VEHICLE SALLYPORT	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to Remain			0
TOTAL			0

8. COMMUNITY CUSTODY	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to remain			0
TOTAL			0

9. INMATE RECORDS/CLASSIFICATION	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to remain			0
TOTAL			0

10.1 GENERAL POPULATION HOUSING CELLS	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to remain			0
TOTAL			0

10.2. GENERAL POPULATION HOUSING DORMS	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to remain			0
TOTAL			0

11. VISITATION - RENOVATE	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing - renovate west unit to video visitation (actual square footage)	1	1272	1272
TOTAL			1272

12. EDUCATION (MULTI-PURPOSE)	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to remain			0
TOTAL			0

13. RECREATION	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to remain			0
TOTAL			0

14.1 MEDICAL SERVICES - NEW	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Health Services Administrator	1	120	120
Director of Nursing	1	120	120
Nurse Supervisor Office	1	120	120
Nurse & Security Station	1	240	240
Records Storage	1	240	240
Copier/Supplies/Workroom	1	80	80
Physician's Office	1	120	120
Staff Toilets	2	50	100
Inmate Waiting/Sallyport	1	120	120
Inmate Toilet	1	50	50
Emergency Treatment	1	140	140
Examination with Sink	4	90	360
Dentist Office	1	80	80
Dental Operatory (2 chair with counter)	1	250	250
Dental Closet, X-ray	1	80	80
Pharmacy	1	300	300
Laboratory	1	200	200
X-ray Room (portable X-ray equipment)	1	150	150
X-ray Processing	1	80	80
General Storage	1	200	200
Medical Supplies & Oxygen Storage	1	80	80
Clean Linen	1	80	80
Dirty Linen	1	80	80
Refuse (contaminated)	1	80	80
Wheelchair/gurney storage	1	40	40
Telemedicine	1	100	100
Janitor's Closet.	1	40	40
TOTAL			3650

Note: Locate in expansion.

14.2. MEDICAL HOLDING (SPECIAL PURPOSE) - NEW	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Medical Holding (negatively pressurized with anteroom and shower)	4	196	784
Medical Holding (individual cells)	10	80	800
Medical Holding (dorm, four bunks)	2	200	400
Shared ADA showers	2	40	80
TOTAL			2064

Note: Locate in expansion.

14.3 MENTAL HEALTH - RENOVATION	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Mental Health Professional Offices	4	110	440
Nurse Office	1	110	110
Records Storage	1	150	150
Supplies/Copier/Workroom	1	80	80
Staff Toilet	2	50	100
Staff Locker/Break	1	180	180
Inmate Waiting/Sallyport	1	80	80
Inmate Toilet	1	50	50
Group counseling/conference	1	240	240
Interview Rooms	2	90	180
Janitor's Closet	1	30	30
TOTAL			1640

15.1 FOOD SERVICE - NEW	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Dry Storage	1	1600	1600
Freezers	1	800	800
Cooler-Refrigerator	1	400	400
TOTAL ADDITION			2800

15.2 FOOD SERVICE - RENOVATION	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing Dry Storage Area to be Food Prep (actual square footage)	1	932	932
TOTAL RENOVATION			932

16. LAUNDRY - NEW	NO. OF SPACES	NET SQUARE ET	TOTAL NSF
Carts sorting	1	420	420
Wash equipment (sized for three 110-pound commercial washers and for three future 110-pound commercial washers for a total of six 110-pound commercial washers)	1	480	480
Dry equipment (sized for three 120-pound commercial dryers and for three future 120-pound commercial dryers for a total of six 120-pound commercial dryers)	1	480	480
Folding area	1	480	480
Clean storage	1	480	480
Janitor storage	1	120	120
Toilet - inmate	1	60	60
Toilet - staff	1	60	60
Office	1	100	100
Break area	1	120	120
Mending	1	120	120
Provide minimum 4'-0" door path to Laundry			
TOTAL NEW			2920

Note: Locate in expansion.

17. MAINTENANCE - NEW	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Multipurpose Shop	1	550	550
Maintenance Equipment/Tools	1	100	100
Electronics/Communications Shop	1	100	100
(Existing building is 24'x32' = 864 SF)			
TOTAL			750

Note: Locate in expansion.

18. WAREHOUSE & COMMISSARY - NEW	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Central Storage	1	2000	2000
Hazardous Materials / Paint Storage	1	80	80
Receiving/Staging Area	1	120	120
Warehouse Office for 1 staff	1	120	120
Staff Restroom (Unisex)	1	50	50
Loading Dock	1	200	200
Cleaning Supply satellite storage	1	150	150
TOTAL			2720

Note: Commissary Storage will remain housed at the main jail building.

19. CENTRAL PLANT - NEW	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to remain			0
TOTAL			0

20. MAGISTRATE - RENOVATION	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to remain			0
TOTAL			0

21. LAW ENFORCEMENT LOBBY	NO. OF SPACES	NET SQUARE FT.	TOTAL NSF
Existing to Remain			0
TOTAL			0

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SECTION IV

Site Characteristics

- A. SITE SIZE AND LOCATION**
- B. EXISTING FEATURES AND USES**
- C. AVAILABILITY OF UTILITIES**
- D. GEOTECHNICAL REPORT**
- E. SITE FEATURES IMPACTING DESIGN OR COST**
- F. EARTHWORK**
- G. LAYOUT**
- H. SITE SECURITY**

IV. SITE CHARACTERISTICS

JAIL FACILITY

A. SITE SIZE AND LOCATION

The expansion of the Middle River Regional Jail is located adjacent to the existing Middle River Regional Jail, in Augusta County, Virginia, along Technology Drive. Lee Highway (Route 11) lies about one-half mile West of the site.

The site is located just south of the Town of Verona and comprises one 24.50 acre parcel. The parcel is bounded by property controlled by Augusta County to the West, South, and East. Dixie Gas and Oil Corporation owns the parcel to the north of the site.

The proposed site was anticipated for the expansion of the Middle River Regional Jail and was graded for the future building with the construction of the existing Middle River Regional Jail.

Schematic layouts are illustrated in the attached exhibits.

B. EXISTING FEATURES AND USES

ZONING

Principal Structure Setbacks:

1. In the A2 Agricultural Residential District, the minimum front yard setback is:
 - a. 50 feet from any public street.
 - b. 36 feet from any private street.
2. In the A2 Agricultural Residential District, the minimum side yard setback is:
 - a. A principal building or structure shall not be erected, altered, located, reconstructed or enlarged nearer to any rear or side lot line than twenty-five feet (25')
 - b. An accessory building or structure which has an area of less than nine hundred square feet (900 sq. ft.) and is no more than twenty feet (20') in height shall not be erected, altered, located, reconstructed or enlarged nearer to any rear or side lot line than five feet (5').
 - c. An accessory building or structure which has an area of nine hundred square feet (900 sq. ft.) or more or is more than twenty feet (20') in height shall not be erected, altered, located, reconstructed or enlarged nearer to any rear or side lot line than twenty-five feet (25').
3. In the A2 Agricultural Residential District, additional setbacks for buildings in excess of 35' in height is:
 - a. For buildings and structures in excess of thirty-five feet (35'), but not more than fifty feet (50') in height, the required setback shall be increased one foot (1') for every one foot (1') increase in building height.

- b. For buildings and structures in excess of fifty feet (50') in height, the required setback shall be increased fifteen feet (15') plus two feet (2') for every one foot (1') increase in building height above fifty feet (50')
4. In the A2 Agricultural Residential District, no building or structure shall exceed seventy-five feet (75') in height.

Parking

There is no clear use for a jail building as defined in the Augusta County County Code and Zoning Ordinance and therefore no clear-cut parking requirements. Additional parking was previously designed in the site plan and constructed for what is now the existing Middle River Regional Jail. Additional parking is needed for the proposed expansion of the facility.

GEOLOGY, SOILS, AND TOPOGRAPHY

The parcel consists of rolling topography with topographic relief ranging from an elevation of approximately 1285 feet (mean sea level MSL) on the highest portions of the site in the western property corner adjacent to Technology Drive, to an elevation of 1250 feet at the eastern portion of the site. The proposed jail expansion is located on the higher part of the site adjacent to the existing jail, in a fairly flat area which has been previously developed, with a proposed finish floor elevation of approximately 1275 feet. In the site development area, elevation contours are between 1285 feet and 1275 feet.

The site consists of the existing jail facility. The jail was constructed on a hill top with runoff directed away from the building in all directions. It appears that the site area drains to an existing channel located outside of the property limits and runs north to the river.

Per USDA Soil Survey data, the project site is comprised of Shenval Loam and Buchanan Fine Sandy Loam. Specific soils data is further discussed in the Geotechnical Report dated January 31, 2003, performed by Zannino Engineering, Inc.

WATER RESOURCES

The Middle River lies approximately 1 mile northeast of the property edge. There are no anticipate floodplains on site.

Because the proposed building expansions and vehicle sallyport will be located within a previously developed portion of the site, it is anticipated that there will be no environmental impacts associated with this project.

STORMWATER

It is anticipated that storm piping will collect stormwater runoff from the proposed facility expansion and discharge into the existing stormwater BMP on site. Runoff will ultimately make its way via natural drainage ways to the Middle River.

Augusta County exercises local authority for review and approval under the Virginia Stormwater Management Program (VSMP) regulations. Stormwater management for the project will be designed utilizing the Virginia Runoff Reduction Method to reduce the phosphorus load and runoff volume and comply with Title 9, Part II B: Technical Criteria for Regulated Land-Disturbing Activities. From calculations, it is anticipated that 1.80 lbs of phosphorous reduction is required. Timmons Group advises the purchase of nutrient credits from a local bank.

The existing stormwater management system on site was designed to account for the future development of the Middle River Regional Jail. The design of the proposed expansion varies from that originally proposed when the jail was originally constructed, and the expected impervious area is significantly less than originally planned. For this reason, we believe the quantity control associated with the existing pond is adequate for the proposed expansion.

It is anticipated that a portion of the storm sewer system will need to be removed and rerouted to the north and south accordingly as it is currently routed through the proposed expansion area footprint.

C. AVAILABILITY OF UTILITIES

WATER

EXISTING SOURCE FACILITIES

The water source for the existing Middle River Regional Jail comes from the Augusta County public water supply. The existing systems are described in detail below.

The existing water system serves the current jail via a 6" diameter line. This 6" service line tees off an existing 8" diameter water main located within the Technology Drive.

The proposed jail expansion will be served with its own meter and fire lines coming off the 8" main within Technology Drive.

Expansion Capacity:

4 staff being "day staff" @ 50 gal / day / person

Average Daily Use:

4 staff x 50 gal / day / person = 200

Average Daily Use Increase

200 GPD (0.14 GPM)

Average Daily Use [increase over existing conditions] 200 GPD (0.14 GPM)

Peak Use:

$$\begin{aligned} 3.0\text{-Peaking Factor} \times \text{Average Daily Use} &= 3.0 \times 200 \text{ GPD} \\ &= 600 \text{ GPD (0.42 GPM)} \end{aligned}$$

WATER SERVICE

It is anticipated that the existing domestic water line and fire flow line have sufficient capacity to serve the expansion. Fire flow requirements are anticipated to be calculated during the design.

WASTEWATER

EXISTING DISPOSAL FACILITIES

Public sewer is available onsite through two existing lines that tie into a main line at the northeast corner of the site. The Middle River Regional Jail currently discharges through a gravity line connecting to the sewer main stated previously. This understanding is based on a review of the design drawings dated September 11, 2003. It is assumed that the existing sewer main has sufficient capacity.

COMMUNICATION

It is anticipated that the existing facility will provide communications for the proposed facility expansion.

ELECTRIC POWER

It is anticipated that the existing facility will provide electrical power for the proposed facility expansion.

NATURAL GAS

There is no natural gas anticipated or available for the proposed facility expansion.

D. GEOTECHNICAL REPORT

A geotechnical investigation, dated January 30, 2003, has been performed by Zannino Engineering, Inc. The purpose of this geotechnical engineering report is to characterize

subsurface conditions at the site and provide some geotechnical recommendations for planning purposes for the proposed improvements.

E. SITE FEATURES IMPACTING DESIGN OR COST

The selected site is well suited for expansion, with minimal cost impacts from site features. However, significant utility costs are expected for the adjustment of storm and sanitary sewers. The following is a summary of selected site features:

- Sufficient land area is available on the proposed site to provide for future expansion of the Middle River Regional Jail.
- Adequate paved area exists such that the Contractor can set up staging area, construction trailers, etc. on site.
- Limits of existing parking and drive isle expansion will need to be established during design.
- The topography of the expansion site (in the area of proposed development) is best characterized as gently sloping grass field. The jail development (building and fenced yard) will be graded to a fairly level pad. It is anticipated that waste material including curb and gutter and paving material will be disposed of off-site.
- Existing wastewater services are anticipated to be adequate for the expansion. Relocation of an existing sewer for up to 230 feet may be required.
- Existing domestic water services are anticipated to be adequate for the expansion.
- No environmental impacts are anticipated to be required.
- Site has previously been graded in anticipation of future expansion.

F. EARTHWORK

The existing Middle River Regional Jail Site has been graded for anticipated expansion. Based on the topography of the site, we anticipate that material will be generated for building footer placement and removal of associated topsoil across all disturbed areas. Material shall be disposed of onsite as practical, however the availability of onsite stockpile areas will need to be further explored. Disposal of material should be included in the project budget.

G. LAYOUT

The configuration consists of an expansion of the existing Middle River Regional Jail directly adjacent on the plan west side of the existing facility. Included in the expansion are support facilities for administrative office space, kitchen storage, laundry, and a medical unit. The proposed building expansion is significantly smaller than the “future expansion” that was originally planned prior to the original construction. The proposed parking expansion was accounted for in the existing Middle River Regional Jail’s site master plan.

H. SITE SECURITY

The security on-site was addressed with the design of the existing facility. It has been assumed that no further measures are required.

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SECTION V

Existing Building Assessment

V. EXISTING BUILDING ASSESSMENT

A. OVERVIEW EXISTING BUILDING ASSESSMENT –

Middle River Regional Jail (MRRJ) opened in 2006 with a rated capacity of 396 inmates. When it opened, the jail authority had three members: Augusta County, the City of Waynesboro, and the City of Staunton. In 2015, Harrisonburg and Rockingham County joined the regional jail authority. The jail had been taking inmates from non-member localities, including Page County. With the addition of the two new localities, the jail was experiencing a peak inmate population in excess of 1,000. MRRJ has since stopped taking inmates from non-members and was averaging a daily inmate population of between 900 and 950 inmates in 2019. In spring of 2021 the average daily inmate population housed at the MRRJ is between 650 and 700 with an additional 50 inmates on home electronic monitoring. An existing conditions assessment was conducted by Moseley Architects on Friday, November 1, 2019. The focus was to assess existing building deficiencies, such as excess wear and tear and failing systems due to the heavier than designed use and functions that are inadequate to manage the ongoing inmate population, which is higher than originally designed for. Currently many areas of the jail are being used differently than intended due to the number of inmates and the breakdown of their classifications and specific needs or requirements. The following items were noted from the existing conditions assessment.

The proposed project will address the most immediate needs of the facility the support facilities that were designed for the rated capacity of 396 inmates with central core functions designed in 2003 to accommodate up to 600 inmates.

B. ARCHITECTURAL ASSESSMENT

Building Entrance/Public Lobby

1. The front reception desk currently houses a security officer. This is an open workstation and does not offer any security or protection to the individuals manning this station. This area should be enclosed with a secure access to the administrative office area and be protected by bullet resistant glass and materials.

Housing Areas

1. Due to the large number of Community Custody inmates, both Work Force and Work Release, these inmates are being housed in the pod designed for female inmates. These inmates exit to the outside near the Loading Dock, away from the front of the building.
2. Due to the larger than anticipated number of female inmates, the area of the jail designed to house maximum custody male inmates is being used to house minimum, medium, and maximum custody female inmates.

3. Due to the large number of cells needed to treat inmates for medical and health related issues, approximately half of the area designed as segregation cells is being used to house inmates undergoing medical care.
4. The housing pods originally designed for classification, adjacent to the jail's intake area, are being used to house maximum custody inmates due to them being displaced by the large female inmate population.
5. There is an inadequate supply of cells separate from general housing to serve inmates with mental health needs and deliver the treatment and services they need.

Administrative Office Area

1. The administrative office area functions well but is lacking in space to accommodate the additional staff and jail authority member meetings.
2. The facility needs additional administrative office space to house current and future staff as the jail authority grows.
3. There is currently no space large enough to serve as a muster room or to hold Jail Authority Board meetings.
4. At the existing "west" Visitation Booths, the secure perimeter dividing wall was not built to save money during the initial construction. These visiting booths are needed and secure walls with visiting windows need to be built to accommodate the increased inmate population.

Kitchen

1. The existing kitchen was designed to provide food for the rated capacity of 396 inmates, plus a future planned expansion to a capacity of approximately 600 inmates.
2. The kitchen is crowded as more staff and inmate labor are working in the kitchen to meet the demand for meal preparation.
3. The prep space is filled up with carts, prep tables, and inmate workers which limits visibility for officers to monitor the inmate kitchen labor force.
4. The prep area limits the ability of the kitchen staff to meet the jail's meal schedule.
5. The food storage areas including freezer space, refrigerator space, and dry storage are not large enough to provide the necessary food storage for the current and anticipated future inmate population. The facility needs approximately 50% more space to store food for the current population and approximately 100% more storage space to store food for the population anticipated in 10 years.

Laundry

1. The laundry facilities are currently operating approximately 22 hours per day to keep up washing uniforms and linens.
2. The washers and dryers are wearing out more quickly because of the heavier use.
3. The laundry is struggling to meet the need due to lack of workspace, insufficient quantity of machines, and near 24-7 use.

Medical

1. The medical area has four cells. The jail's segregation area is also being used to house, on average, 12 inmates with medical needs for a total of 16 inmates in the medical area on average.
2. Additional dedicated medical cells are needed to provide the healthcare services necessary and to keep the segregation area available for its intended use.
3. The current medical treatment area was designed to function as a clinic. Ideally this would be designed as an infirmary to house inmates while they recover from illness.

Intake and Property Storage

1. The property storage area is full and needs to be expanded to house the current and anticipated future inmate population. Suggestion was made to convert two male inmate dormitories (originally constructed as Community Custody) down the hall into additional Property Storage, but equivalent dormitory space would need to be added elsewhere. This project will not include any renovation to this area, as no additional bed space or rated capacity is being included in the project.
2. As reported, Intake and Intake Holding areas are adequate, despite the increased population.
3. Magistrate is currently located in Intake with no direct public access. Suggestion has been made to relocate the Magistrate's office to the Community Custody area, which does have public access. Access from Intake could be provided by converting one Intake holding cell to a sallyport that leads to the new Magistrate's area. This project will not include any renovation to this area.

MEP support systems overview

1. The existing mechanical equipment is extremely well maintained but is wearing out earlier than anticipated due to much heavier load and use than anticipated in the original design.
2. Refer to Mechanical, Electrical, Plumbing (MEP), and Fire Protection Assessments below for more details.

C. DETENTION AND ELECTRONIC SECURITY ASSESSMENT

1. The building is generally well-maintained and in good shape.
2. Design of original building was in accordance with the 1994 Jail Standards and there were no major deficiencies noted.
3. Remote release of locks in a means of egress is provided per building code.
4. Pneumatic door locking system appears to be in good shape. As reported, compressors and air dryers get regular maintenance.
5. Touchscreen/ GUI system was upgraded in 2017.
6. Fiber backbone added between security equipment rooms in 2018.
7. Owner is ready to embark on replacing the existing intercom system with a Harding intercom system.
8. Cameras are a mixture of analog and IP cameras (original cameras are Bosch; newer cameras are by various manufacturers).
9. OnSSI Video Management System; recording 24/7. Current video storage capacity is 6 months.
10. Surge protection has been added to protect low voltage systems.
11. DPS at cell doors have plastic contacts and are failing to send an accurate signal to the PLC ("secure" signal needed from both the DPS and lock status switch to indicated door is secure on the touchscreen).
12. If chain link fencing is added at the existing Loading Dock, all fencing and gates should be grounded.

D. STRUCTURAL ASSESSMENT

A site visit with limited visual inspection was performed on November 1, 2019 at the Middle River Regional Jail to determine and assess the existing structural systems of the existing one-story, two-level, structure. Existing building drawings from 2003 were available and utilized for structural system verification. The existing structural system within the jail is generally precast floor and roof construction on exterior masonry bearing walls. Existing CMU (concrete masonry unit) interior bearings walls, as well as precast concrete beams bearing on precast concrete columns, support a combination of precast hollow core concrete planks and flat slabs. Precast concrete flat slabs with topping slabs are utilized for cell tier mezzanines. Precast flat slabs are utilized as security cap slabs at various locations, as well as over the existing cells. The majority of the roof construction consists of precast hollow core planks with a concrete topping slab. Localized areas of roof over the cells consist of precast concrete slab slabs with a

concrete topping slab. Interior partition walls are CMU. All bearing walls are founded on shallow foundations, consisting of continuous wall footings, and precast concrete columns are founded on isolated column footings.

The existing structural systems of the jail visually appear to be in good condition, as expected from a precast and masonry structure of this age. No visible signs of damage or deterioration were detected, from the minimal amount of structure that was visually accessible. The presence and conditions of continuous wall footings and isolated column footings could not be verified by the visual inspection. The existing slab on grade thickness and reinforcing could not be verified visually. Overall, from limited visual observation, the structural systems appear to be adequate and in accordance with construction documents.

E. PLUMBING ASSESSMENT

1. The plumbing fixtures in the facility are in good to fair condition and appear to be functional, however, many have higher flow rates than the current building code allows.
2. Observations of the incoming domestic water supply indicated high pressure above 100 psi (pounds per square inch) prior to entering the RPZ (Reduced Pressure Zone) assembly station. The RPZ arrangement may be contributing to the noticeable wear of the devices. One of the RPZ's has noticeably more deterioration than the other. Additionally, the water softener system does not remove all sediment, where adding a filtration system to reducing sediment in water supply would be beneficial to extend the life of the piping network.
3. The gas fired domestic water heaters are approximately 15 years old and there are 4 sets of them tied to one distribution header that feeds a dual thermostatic mixing valve station for the entire facility. High temperature water above 130°F is directly distributed to the kitchen without the utilization of a mixing valve. This arrangement does not meet the current plumbing code. Discussions with the building engineers revealed a long history of replacing pipe and fittings on the domestic water heater header at the entrance and exit points of the domestic hot water storage tanks. The erosion in the pipe and fittings is most likely caused by the high velocity and high heat of the water. The domestic water system includes salt/brine water softening equipment set up to remediate hard water in the system. It was not clear that the softening system includes filtration for sediment. Sediment would also contribute to the excessive wear of the piping.
4. There were no reported issues with the sanitary system and the building distribution domestic water piping appears to be in good condition. All fixture pinned cleanouts were removed from the sanitary discharge to alleviate excessive amounts of drain stoppages.
5. Several existing stainless-steel shower cabinets were observed that have features that contribute to suicide risk: The cabinets are open on top and have a

header at the front that a sheet could be looped around. Likewise, the shower grab bars do not have a closure plate on the bottom.

F. FIRE PROTECTION ASSESSMENT

1. The building is fully sprinkled and appears to be in good condition. There are portions of the original detention areas that have had sprinkler heads replaced due to vandalism.

G. MECHANICAL ASSESSMENT

1. HVAC is primarily served by hot/ chilled water modular rooftop air handling units and the entire facility is conditioned. This equipment is approximately 15 years old appears to be in fair condition. There have been no maintenance complaints from operating staff in regard to equipment operation.
2. The existing boilers serving the hot water loop are the original equipment from the construction of the building. They are in fair condition given the age of the equipment. There appears to be some manual operation of the boiler plant staging.
3. The chilled and hot water pumps are primary/ secondary configuration, where secondary chilled water pumps include variable speed drives and all other pumps are constant speed. They are in fair condition; however, controls appear to be utilized in a semi-manual operation.
4. The exhaust system serving the bathroom/showers in the cell pods is not adequately exhausting the area. They are having humidity issues where they are located and rust issues as well. It appears that the moisture is affecting the lights, grilles, and fire alarm strobes.
5. The two (2) existing 165-ton chillers have been refurbished within the past two years, after discussing with operation staff on site he said they both run at 100% capacity during the summer.
6. In the kitchen a restaurant grade dishwasher was observed that is producing a significant amount of steam. It is severely oversized for their needs and due to this the exhaust is significantly undersized creating a latent load issue in and around the dishwasher.

H. ELECTRICAL ASSESSMENT

Electrical Power

The main electrical room houses the electrical service equipment. The electrical service consists of a 480V, 3-Phase, 5000-amp service, service entrance rated

equipment, and panels. The main service is fed underground from a pad mounted power company transformer to the CT cabinet in the switchboard within the mechanical room. The switchboard is a GE Spectra style switchboard with two 2500-amp main breakers. One 2500-amp main breaker feeds the NEC 702(Optional Standby) transfer switch and all optional standby loads within the building. The other 2500-amp main breaker feeds the normal power distribution system for the entire building. The equipment is original to the building, but a normal maintenance program has allowed the equipment to age well.

The generator is outside the building in an enclosure. The generator is diesel drive from a belly tank and is 1500 kW. There are manual transfer switches between the transfer switches and the generator connection that would allow for portable roll up generators to be utilized in the event the on-site generator has any issues or downtime. The owner has expressed that these do not work as intended.

Power to all mechanical equipment was fed to GE Evolution motor control centers. The motor control centers appear to be in good condition.

There is a worry about power quality and grounding within the building. When a lightning event occurs, there are issues with equipment and breakers. This may be due to a lack of surge protective devices on downstream panels. There is a transient voltage surge suppressor on the main switchboard, however there isn't one on any of the NEC 702 distribution system. There could also be a faulty ground condition within the electrical distribution system due to power quality or power surges from the utility. An evaluation and upgrade of the facility's lightning protection system will proceed as the project progresses.

Interior Lighting

The existing interior lighting throughout the facility is provided by recessed mounted fluorescent fixtures. The majority of fixtures appear to have T8 lamps, with the exception of some replacement fixtures that are LED. All the original fixtures are generally in good to fair condition. Some fixtures appear to have lamps that have burned out or ballasts that have reached end of life. Some of the lenses have yellowed over time. Existing emergency lighting consists of lighting fed from the generator for the required emergency light fixtures.

Exterior Lighting

The existing exterior lighting consists of building mounted wall packs, can lights, and pole mounted parking lot lights. The pole mounted lights in the parking area appear to be 30 feet tall utilizing metal halide lamps. The poles appear to be in fair condition. The building mounted wall packs appear to be in good condition. The recessed can lights appear to be original to the building and are in decent condition. The lenses seemed dirty and it was difficult to tell if the debris was on the surface of the lens or within the fixture. The exterior lighting is controlled by a lighting contactor in combination with a time clock and photocell. As exterior wall mounted light fixtures fail, they are currently being replaced with LED wall packs.

Communications, Data and Fire Alarm

The existing internet and phone service from the utility appears to be in good condition. Internet access provided to the existing building is high speed and should not require an upgrade. Wireless internet access is currently provided by way of a wireless access points throughout the facility.

There are numerous places where televisions and other equipment have been provided as technology has evolves. These data pathways are surface mounted conduits to the CMU walls.

The previous fire alarm system was replaced with a new Kidde, digital, addressable fire alarm system in 2019. During the visit to the jail, the fire alarm upgrade project was on-going.

There is a lightning protection system provided with the building. An evaluation and upgrade of the facility's lightning protection system will proceed as the project progresses.

PLANNING STUDY
For the
EXPANSION & RENOVATION OF
THE MIDDLE RIVER REGIONAL JAIL

SECTION VI

Project Description

- A. DESIGN RATIONALE**
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VI. PROJECT DESCRIPTION

A. DESIGN RATIONALE

The proposed expansion and renovation of the Middle River Regional Jail will serve a sentenced population.

The following factors significantly impacted the design of the Jail Expansion and, collectively, dictated significantly to the design rationale. The Commonwealth of Virginia Board of Corrections' *Standards for Planning, Design, Construction, and Reimbursement of Local Correctional Facilities, Effective March 8, 2018* was the dominant influence in the design rationale for security issues and the general incarceration environment.

1. The primary need is to expand and upgrade the support facilities of the jail to support the inmate population and the staff serving same.
2. Configuration and size of available land in proximity to the existing jail and its effect on the proposed construction.
3. The existing type of construction.
4. The need to add kitchen prep and food storage space.
5. The need to add laundry processing facilities.
6. The need to add long term storage for non-perishable items purchased in bulk quantities

B. GENERAL DESCRIPTION OF PROJECT

This project is a proposed addition to the existing Middle River Regional Jail (MMRJ). This project consists of an addition with no increase in rated bed capacity and includes:

1. expanded laundry facilities,
2. expanded administration area,
3. a new medical infirmary,
4. expansion of kitchen storage;

The project includes the expansion of the existing maintenance building for maintenance and additional square footage for an expanded warehouse.

The project also includes renovations and equipment replacement in the existing jail.

C. TYPE OF CONSTRUCTION

The building expansion is a single-story addition. The main structure is CMU bearing walls. The exterior walls will contain 2.5" of continuous medium density spray foam insulation clad with split-faced CMU to match the existing jail. Where perimeter

security construction is required, walls shall be constructed of twelve inch concrete masonry units with cores filled with grout and vertical rebar. Exterior doors are detention grade steel doors and frames. The interior partitions are constructed of concrete masonry units. Security walls of reinforced and grouted solid concrete masonry units will extend to the concrete floor/roof deck. Interior doors and windows are constructed of detention grade steel frames and abuse resistant glazing. The design of the addition incorporates all life safety features as required under applicable codes.

There are no known aesthetic design criteria or architectural review board requirements that must be met. The exterior appearance of the jail should be understated, and exterior materials chosen are to be functional and durable. The exterior walls will be either precast concrete wall panels or cavity wall construction, with split-face concrete block veneer. The primary roofing system will be a single-ply membrane system at ¼" slope per foot.

The interior walls will be of concrete masonry, bearing and non-bearing types, except in administrative areas where gypsum wallboard on metal studs will be used. Security walls, interior and exterior, will contain steel rebars and will be grouted solid per Department of Corrections' standards.

Ceilings will vary from exposed structure to perforated security acoustical steel, drywall, and lay-in acoustical panels. All ceilings in inmate-accessible areas will be primarily detention grade. Floor finishes will include exposed sealed concrete, VCT, carpet, and ceramic tile (in selected toilet areas such as staff lockers, public toilets, etc.). All finishes will be selected for appropriateness for location, accessibility, and maintenance. Interior CMU walls and partitions will be filled and painted, using special coating systems where appropriate.

Doors, frames and windows will be hollow metal, detention and non-detention grades where appropriate. Hardware will be detention grade at secure doors and heavy-duty commercial hardware elsewhere. Security fasteners will be used on hardware where accessible to inmates.

Glazing will be security-type polycarbonate in varying thicknesses where required for security. Fire-rated security glazing will be used where required by code. Tempered glass will be used elsewhere. Glazing will be laminated with tinted mylar film where one-way observation is desirable, and translucent glazing is anticipated for exterior windows located in inmate areas.

A pneumatic locking system is proposed, and maximum, medium, and minimum security lock types will be used as appropriate.

The security control system will be an integrated system of lock control, video surveillance, intercom, duress, and auxiliary controls. The security control system for the expansion will be interfaced with the existing control system so that existing Master Control has the ability to monitor and control the expansion area, and take over all or portions of the expansion in case of emergency.

Consoles at satellite control rooms will be touchscreen type. The touchscreen system has the advantages of interfacing easily with the operator, good life cycle cost, can operate and control all security systems (video surveillance, communications, door locks, etc.), and can be re-programmed to meet future needs.

All construction involving security and the built environment for detention facilities will be in accordance with the Virginia Board of Corrections *Jail Standards*.

D. GROSS FLOOR AREA

The total gross floor area of the jail expansion is approximately 24,601 overall gross square feet (OGF) between additions to the existing main jail (20,402 OGF) and the existing warehouse (4199 OGF). The renovated area totals 4650 gross square feet (GSF).

E. BUILDING CODE CRITERIA

1. Primary Use Group: I-3, Condition 4, non-separated mixed use.
Secondary Uses: S-2 Storage and B Business.
2. Firewall – 3 hr is located between the existing building and the addition
3. Occupant Load by Use:

Total occupants for the expansion area as calculated from Table 1004.1.2. of the 2015 International Building Code = 168 occupants.

- c. Type of Construction: IIB
- d. Automatic Sprinkler System
- e. Engineered Smoke Control System

F. FINISHES

Preliminary finish selections are as follows:

SPACE	FLOOR	WALL	CEILING
Main Corridor	Sealed Concrete	Painted	Security Metal

Interview/ Classification/ Medical	Sealed Concrete	Painted	Security Metal
Toilets (inmate)	Sealed Concrete	Painted	Security Metal
Toilets (staff)	Ceramic Tile	Ceramic Tile/ Painted	Acoustic ceiling panels (in unsecured areas)
Shower	Stainless Steel	Stainless Steel	Stainless Steel
Laundry	Sealed Concrete	Painted	Painted
Transfer Office	Sealed Concrete	Painted	Security Metal
Sally Port	Sealed Concrete	Painted	Security Metal
Mech/Elec/Storage	Exposed	Painted	Exposed

Security Metal = Suspended perforated steel with acoustical batts or perforated steel planks for higher security areas.

G. PROVISIONS FOR FUTURE EXPANSION

Future expansion may occur in future phases and projects. It is anticipated that any future expansions would occur to the west of the expansion proposed under this project.

H. STRUCTURAL DESCRIPTION

1. Codes and Standards:

Virginia Uniform Statewide Building Code (VUSBC), 2015 Edition

Minimum Design Loads for Buildings and Other Structures/ASCE 7-10

American Concrete Institute (ACI) - Building Code Requirements for Structural Concrete and Commentary/318-14

American Concrete Institute (ACI) - Building Code Requirements and Specifications for Masonry Structures/530-13/530.1-13

American Institute of Steel Construction (AISC) – ASD Manual of Steel Construction/13th Edition

2. Design Loads:

Design live loads shall be in accordance with the VUSBC, 2015 Edition, (IBC 2015), Risk Category III.

Dead Load: Actual calculated weight of permanent construction

Minimum Floor Live Loads:

Offices / Admin	50 PSF (pounds per square foot)
Stairs	Not required
Lobbies and Corridors	100 PSF
Mezzanines (Dorms)	Not required
Storage / Electrical Rooms	125 PSF
Mechanical Rooms	150 PSF

Roof Load: 20 PSF or Snow Load, whichever is greater

Snow Loads: Ground Snow Load, $P_g = 43$ PSF
Flat Roof Snow Load, $P_f = 33.1$ PSF
Sloped Roof Snow Load, $P_s = 33.1$ PSF
Snow Importance Factor, $I_s = 1.10$
Exposure Factor, $C_e = 1.0$
Thermal Factor, $C_t = 1.0$

Wind Loads: Basic Wind Speed (3 second gust), $V = 120$ MPH
Exposure = Exposure Category B
Internal Pressure Coefficient, $GC_{pi} = +0.18, -0.18$

Seismic Loads: Site Class = D (assumed pending geotechnical report)
Seismic Importance Factor, $I_e = 1.25$
Seismic Design Category = B
Spectral Response Acceleration
at Short Periods, $S_s = 0.162$
Spectral Response Acceleration
at 1-Second Period, $S_1 = 0.065$
Basic Seismic Force-Resisting System:
Bearing Wall System: Intermediate Reinforced Masonry
Shear Walls
Analysis Procedure: Equivalent Lateral Force

3. Structural Systems:

The proposed addition to the Middle River Regional Jail facility located in Staunton, Virginia shall be a single story building, founded on shallow foundations consisting of continuous strip footings for walls and isolated spread footings for columns, as required. Foundations will be at minimum depth and shall be sized for allowable soil bearing pressure, contingent on the final geotechnical report. The building shall have a 4" reinforced concrete slab on grade.

The building shall utilize exterior load-bearing masonry cavity walls with masonry veneer. The roof systems shall utilize precast hollow core structural planks with a concrete topping slab, bearing on exterior and interior masonry walls, as appropriate. Interior bearing walls shall be masonry. Where required in open spaces, precast concrete columns and precast beams shall be utilized. Lateral forces shall be resisted by reinforced masonry shear walls and steel roof deck diaphragms in both directions.

I. PLUMBING / FIRE PROTECTION DESCRIPTION

Code References

The proposed plumbing and fire protection systems were analyzed and recommendations made referencing design standards from the International Mechanical Code (2018), International Plumbing Code (2018), and NFPA.

Plumbing – Proposed Systems

Plumbing Fixtures and Equipment

Plumbing fixtures accessible to inmates shall be vandal resistant. It is recommended that penal fixtures employ electrically operated push buttons linked to Master Control and be coordinated with the security systems. Fixtures for staff use shall be standard commercial grade plumbing fixtures. Fixtures accessible to the physically handicapped shall be provided where required.

Domestic Water Piping System

The existing facility is served by a 6" domestic water line with a dual parallel configuration reduced pressure zone (RPZ) backflow preventer. This existing service shall be reconfigured with the pressure reducing valve on the inlet of the RPZ assembly. A water filtration system will be added to the existing water service to reduce sediment in water to help extend the life of the piping network.

The existing domestic hot water heaters will be replaced including the piping in the mechanical room. The new heaters will be propane gas-fired and sized to accommodate the expansion. The hot water system will include code required mixing valves to serve the various loads in the building: 140°F for the kitchen, 120°F for the non-inmate areas, and 90°F for areas with inmates. Each system will include circulation pumps to maintain the water temperature throughout the domestic hot water systems.

The existing domestic cold water system will be extended to serve fixtures in the expansion. The existing water meter for the main building will be relocated and replaced.

Sanitary Piping System

A 4" sanitary main shall serve the expansion and connect to the site sewer system. Piping systems for the expansion will be standard weight cast iron no-hub above floor and below ground.

Storm Water Piping System

A combination of gutters with downspouts and internal roof drains will serve the expansion. All the drains will connect to the existing site storm drainage system.

Propane Gas

The facility is served by an existing propane gas system with an above ground tank located behind the facility. The existing system will remain as is with no modifications.

Fire Protection

The existing facility is served by a 6" combined domestic water and fire line. The size of the service is adequate to accommodate the proposed expansion and the existing sprinkler piping system will be extended to serve the expansion.

The sprinkler systems for the expansion will be a hydraulically calculated wet type sprinkler system designed in accordance with NFPA-13. The sprinkler system shall be zoned to coincide with the zoning of the smoke control system. Areas accessible to inmates shall employ institutional style sprinkler heads. All other areas shall have standard heads.

Consideration will be given to conversion of existing water-based fire suppression to non-water-based fire suppression for key computer server rooms and remote electronics equipment closets.

The existing fire department connection for the main building will be relocated and replaced.

Existing Areas - Renovation

The existing plumbing and fire protection systems will be modified to accommodate the renovations in the various areas throughout the existing building.

J. HVAC DESCRIPTION

Code References

The proposed HVAC systems were analyzed, and recommendations made referencing design standards from the International Mechanical Code (2018), International Plumbing Code (2018), and NFPA.

HVAC Systems

Rooftop Air Handling Units

The addition will be served by packaged, direct-expansion (DX), modular rooftop units with exhaust air energy recovery and electric heat.

Smoke Control System

The Medical area of the expansion will be provided with a new smoke control system similar to the existing building. The smoke control system will be controlled by the fire alarm system.

Ventilation

The existing dishwasher exhaust system will be modified with a larger exhaust fan and possibly larger ductwork depending on the increase in exhaust to the area.

Central Plant

The existing central plant (chillers and boilers) will remain as is with no modifications as the expansion will be served by standalone equipment.

Controls

New controls for the equipment serving the expansion will be provided and integrated into the existing controls systems. The existing controls system will be upgraded as required to facilitate the integration.

Existing Areas - Renovation

The existing systems, ductwork, diffusers, and controls will be modified to accommodate the renovations in the various areas throughout the existing building.

Warehouse and Maintenance Expansion

The maintenance area of the expansion will be served by a packaged, DX unit with electric heat mounted on grade adjacent to the building to provide cooling and heating. The warehouse area of the expansion will be served by a series of exhaust fans and unit heaters to provide ventilation and heating only for that area.

K. ELECTRICAL DESCRIPTION

General Provisions

The electrical portion of the work will consist of providing building power, lighting, communication raceways and boxes, and fire alarm systems for the addition. All electrical work shall be in compliance with all applicable Federal, State, and local laws and regulations governing standards of design, construction, workmanship and material. Electrical work shall be in compliance with the latest-adopted National Electrical Code (NEC).

Electrical Power

The existing electrical service and equipment are of sufficient size such that it can be retained for use in the renovated building and the proposed expansion. During the original design spare breakers for additional growth were provided along with feeders to the anticipated location of connection. The capacity of the space breakers will be to be confirmed to determine if they can accommodate the expansion. It is possible that the current demand for the existing building allows for more flexibility in available capacity from the existing switchboard, but that is yet to be determined. A surge protective device (SPD) device should be provided to protect sensitive electronic equipment. Existing receptacles and circuitry may be relocated depending on the nature of the modifications.

The existing manual transfer switch layout and configuration should be modified such that it is operational. Existing equipment does not operate correctly. If the loads on the existing generator are at the demand factor we believe, the generator should have the capacity for the additional load of the expansion, as well as any modifications within the original portion of the building.

A ground loop is desired to help mitigate the grounding issues present at the facility. The ground loop of the lighting protection system should allow for alternate paths to ground in addition to providing the desired level of ground resistance.

Interior Lighting

Existing interior lighting is in fair condition, however it is inefficient and utilizes more energy than current technology in LED lighting. T8 fluorescent bulbs are being slowly phased out and may be difficult to obtain in the future. An upgrade to LED lighting is proposed to improve the quality of light and also provide energy savings. The payback is anticipated to be between 5 and 7 years with reduced maintenance costs and energy consumption.

Existing pole mounted site lighting can also be retrofit with LED technology. The existing poles can be reutilized. This would provide energy savings on the exterior lighting as well as providing a higher quality of light and increased output.

All new lighting in the proposed addition will be LED. Lighting levels will be in accordance with recommendations Illumination Engineering Society (IES) Standards and the needs of the owner. Lighting for the interior and the site is proposed to be energy efficient LED type fixtures. Egress lighting will be designed to provide 1.0 footcandles average with a minimum of 0.1 footcandles.

Communications, Data and Fire Alarm

The existing communications services in the building are adequate to service the proposed expansion. A new IDF closet will be provided in the expansion that will provide a local space for telecom distribution. Pathways will be provided where required for communications devices.

The fire alarm system currently undergoing an upgrade.

The fire alarm system for the expansion will be expanded from the fire alarm system currently being installed. The fire alarm system shall be of the intelligent, electrically operated, supervised, and closed circuit type. The fire alarm system shall allow for individually annunciated devices. The system will include fire alarm-programmed dry contacts for security electronics and building automation system monitoring of fire alarm status. All cabling for the fire alarm system shall be in conduit.

An LCD text annunciator panel with full system operability will be provided in the entry lobby as part of the fire alarm system. A graphic annunciator will also be provided if requested by the Building Official. The fire alarm system will have a digital alarm communicator transmitter with dedicated telephone lines to notify an off-site monitoring station. This will require a monthly monitoring contract that will not be included in the construction cost.

Manual pull stations, smoke detectors, thermal detectors, and alarm horns with visual indication shall be located at all required locations in accordance with applicable codes and standards. Devices in suspect-accessible areas shall have protective covers. All system interfaces such as auxiliary control panels and wiring shall be as recommended by the system manufacturer.

Lightning Protection

The existing lightning protection system will be evaluated and upgraded as needed. For the proposed expansion, the facility will be provided with a UL-Certified Lightning Protection System designed and installed in accordance with NFPA 780.

Existing Areas - Renovation

The existing electrical systems will be modified to accommodate the renovations in the various areas throughout the existing building.

Warehouse and Maintenance Expansion

The expansion will be served by a new electrical service with power, lighting, communications, data, and fire alarm systems provided as described above. Power will be provided for any specialized equipment.

**PLANNING STUDY
For the
EXPANSION & RENOVATION OF
THE MIDDLE RIVER REGIONAL JAIL**

SECTION VII

**Annual Heating/Cooling Cost and
Energy Analysis**

VII. ANNUAL HEATING/COOLING COST AND ENERGY ANALYSIS

Based on our professional engineering experience and judgment, considering the systems serving the existing facility, designing similar systems provides the most benefit on a life cycle costs basis. Life cycle costs take into account first cost, energy cost, maintenance considerations, and service life as factors. In addition, the system provides the benefit of the equipment being located outside of the secure areas. The majority of the equipment requiring maintenance can be easily serviced on the roof or outside of the secure perimeter.

Utility numbers are based on current utility and usage rates for the facility. Using the rates relative to the existing square footage. Plumbing rates were used averaging the last two years due to a plumbing leak which increased water usage beyond what has been typical for the facility.

Here are the following usage rates per square foot of building area:

Electrical: \$1.71
HVAC: \$0.50
Plumbing/FP (Water and Sewer): \$1.43

Maintenance rates are based on industry standards and our previous experience in working with correctional facilities. Here are the following maintenance rates per square foot of building area:

Electrical: \$0.22
HVAC: \$0.50
Plumbing/FP: \$0.17

Historical Utility Rates:	2017	2018
1. Electrical	\$327,917	\$348,182
2. HVAC	\$89,390	\$102,313
3. <u>Plumbing/Fire Protection</u>	<u>\$197,118</u>	<u>\$386,541</u>
TOTAL	\$617,715	\$837,036

Anticipated Increase in Annual Utility Rates:

1. Electrical – Utility –	\$27,150
2. HVAC – Utility –	\$11,600
3. Plumbing/fire protection – Utility (water and sewer)	\$33,200
4. Electrical – Maintenance –	\$5,100
5. HVAC – Maintenance –	\$11,600
6. <u>Plumbing/fire protection – Maintenance –</u>	<u>\$4,000</u>
TOTAL	\$92,650

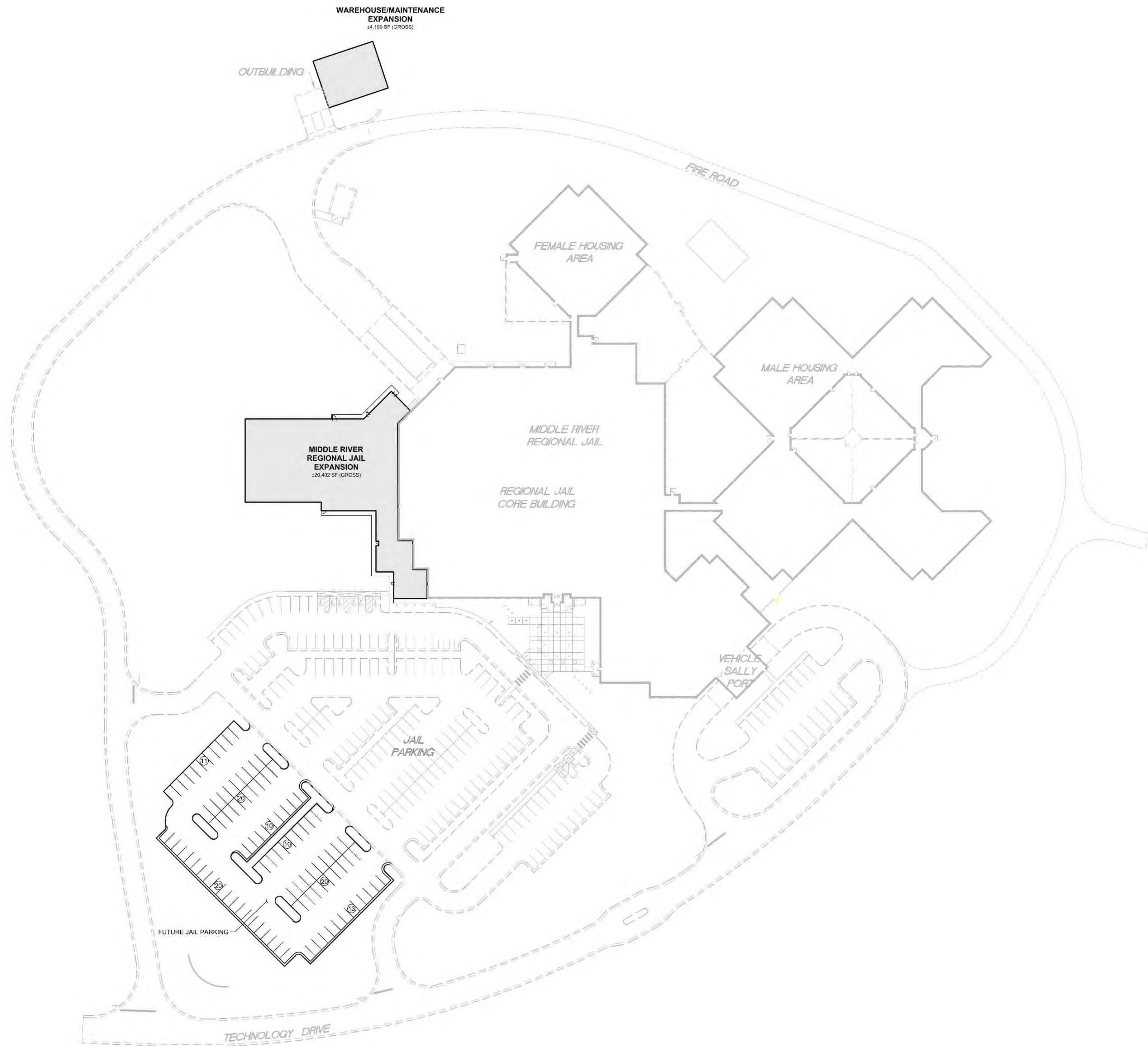
**PLANNING STUDY
For the
EXPANSION & RENOVATION OF
THE MIDDLE RIVER REGIONAL JAIL**

**SECTION VIII
Conceptual Drawings**

CONCEPTUAL DRAWINGS

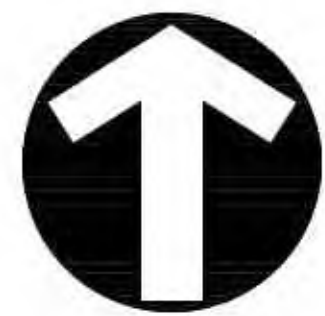
C1.0	CONCEPTUAL SITE PLAN
A1.0	OVERALL FIRST FLOOR PLAN
A2.1	FIRST FLOOR PLAN
A4.1	BUILDING ELEVATION

C1.0 CONCEPTUAL SITE PLAN



MIDDLE RIVER REGIONAL JAIL EXPANSION

SITE LAYOUT - November 4, 2021



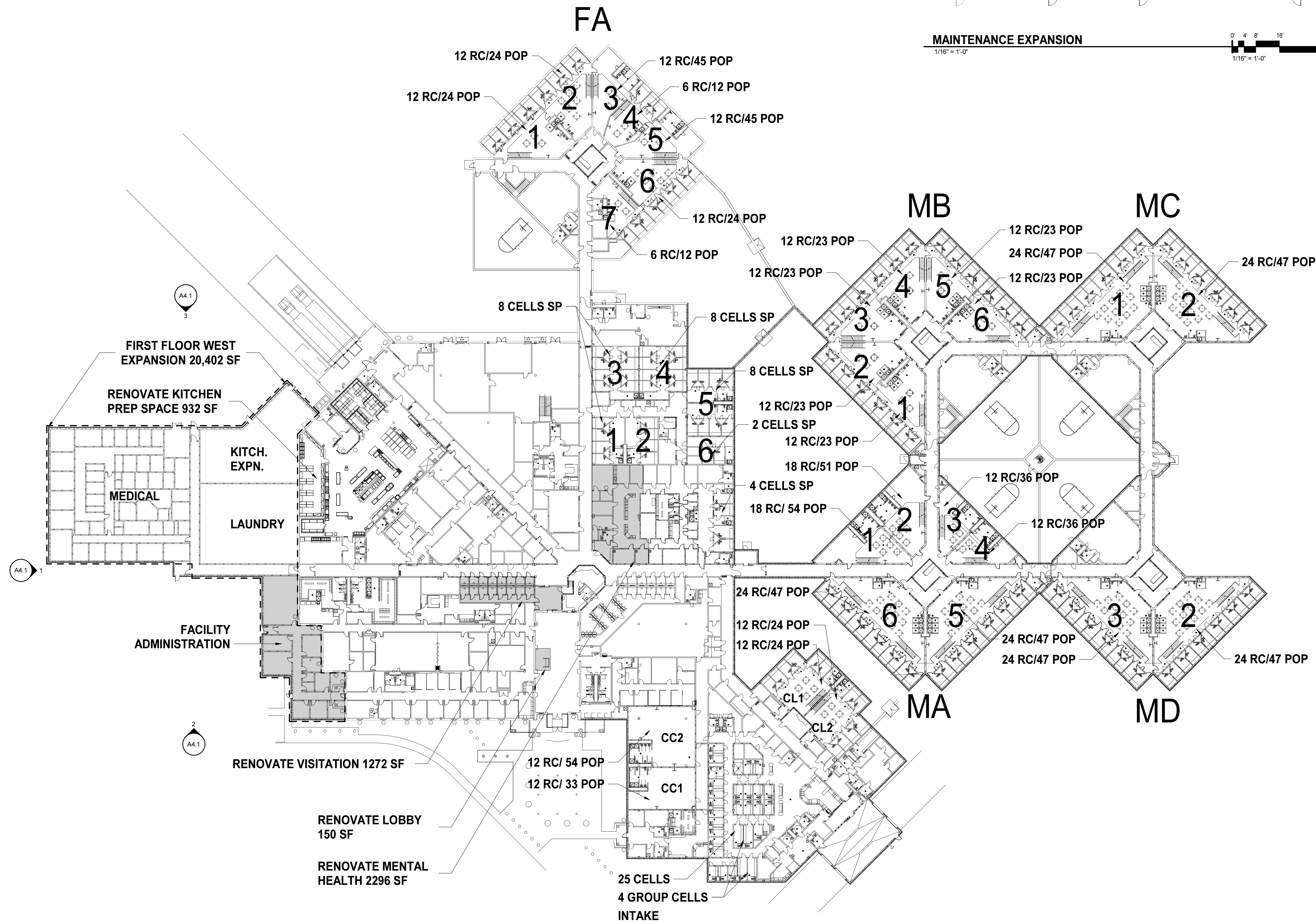
SCALE 1"=50'
0 50' 100'

A1.0 OVERALL FIRST FLOOR PLAN

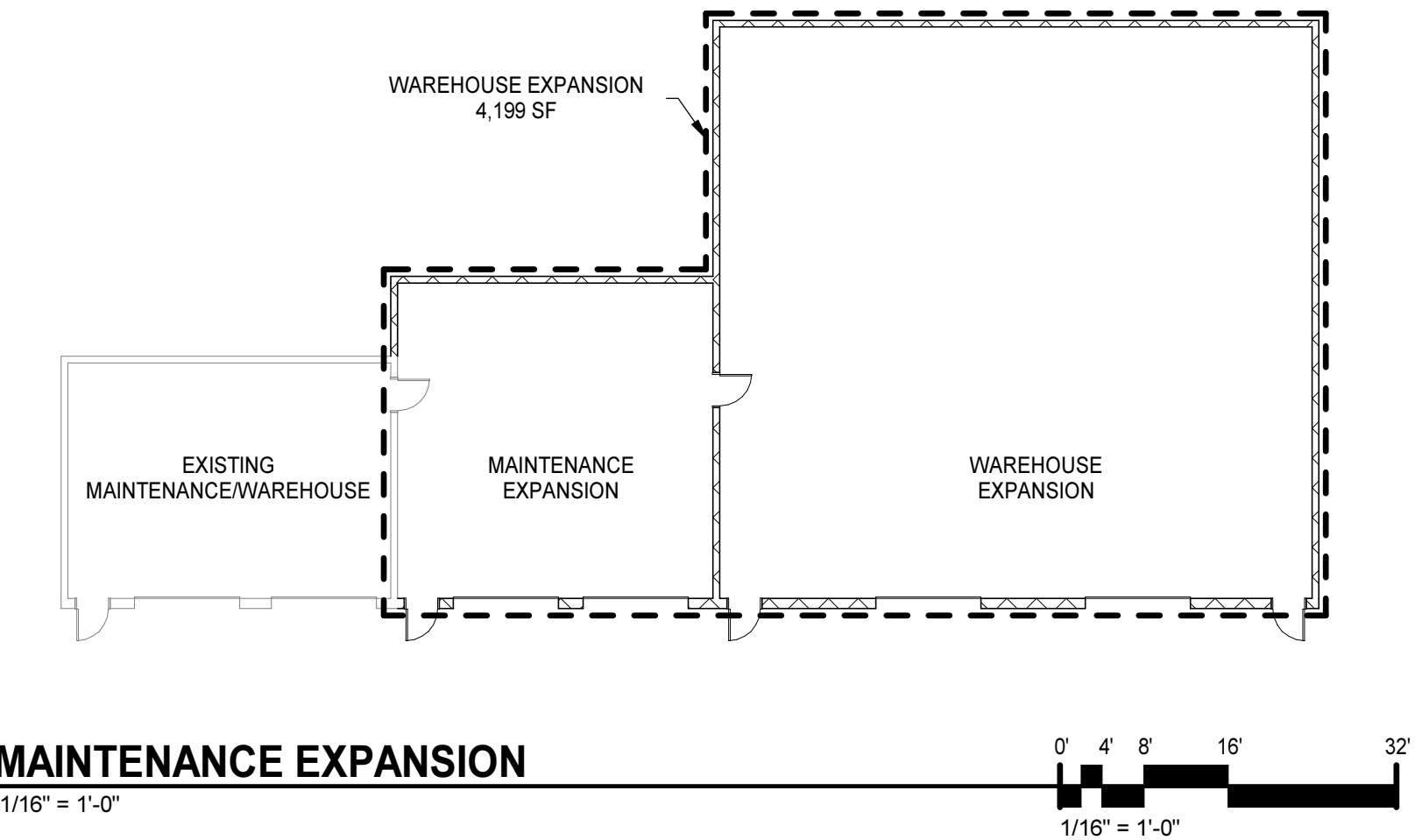
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20,402 FIRST FLOOR WEST EXPANSION
4,199 WAREHOUSE EXPANSION
24,601 SF TOTAL

N
OVERALL FIRST FLOOR PLAN
1/32" = 1'-0"



LEGEND
12 RC/23 POP = RATED CAPACITY OF 12; 9/2019
POPULATION OF 23
8 CELLS SP = 8 CELLS/BEDS SPECIAL PURPOSE
HOUSING



MIDDLE RIVER REGIONAL JAIL - CBCP

MIDDLE RIVER REGIONAL JAIL
350 TECHNOLOGY DR., STAUNTON, VA 24401

PROJECT NO.	DATE
590266	NOVEMBER 4, 2021
REVISIONS	
DATE	DESCRIPTION

OVERALL FIRST
FLOOR PLAN

A1.0

MOSELEYARCHITECTS

PROGRESS
PRINT NOT FOR
CONSTRUCTION

3200 NORFOLK STREET, RICHMOND, VA 23230
PHONE (804) 794-7555 FAX (804) 355-5690
MOSELEYARCHITECTS.COM

A2.1 FIRST FLOOR PLAN

MEDICAL HOLDING
3,580 SF

FACILITY ADMINISTRATION
EXPANSION
20,402 SF

A4.1 1

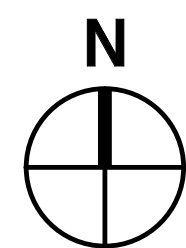
MEDICAL SERVICES
4,355 SF

KITCHEN
3,420 SF

LAUNDRY
3,645 SF

FACILITY ADMIN
3,140 SF

EXISTING
BUILDING



FIRST FLOOR PLAN
1/8" = 1'-0"

0' 2' 4' 8' 16'
1/8" = 1'-0"

PROJECT NO.	DATE
580266	NOVEMBER 4, 2021
REVISIONS	
DATE	DESCRIPTION

FIRST FLOOR PLAN

MIDDLE RIVER REGIONAL JAIL - CBCP

MIDDLE RIVER REGIONAL JAIL
350 TECHNOLOGY DR., STAUNTON, VA 24401

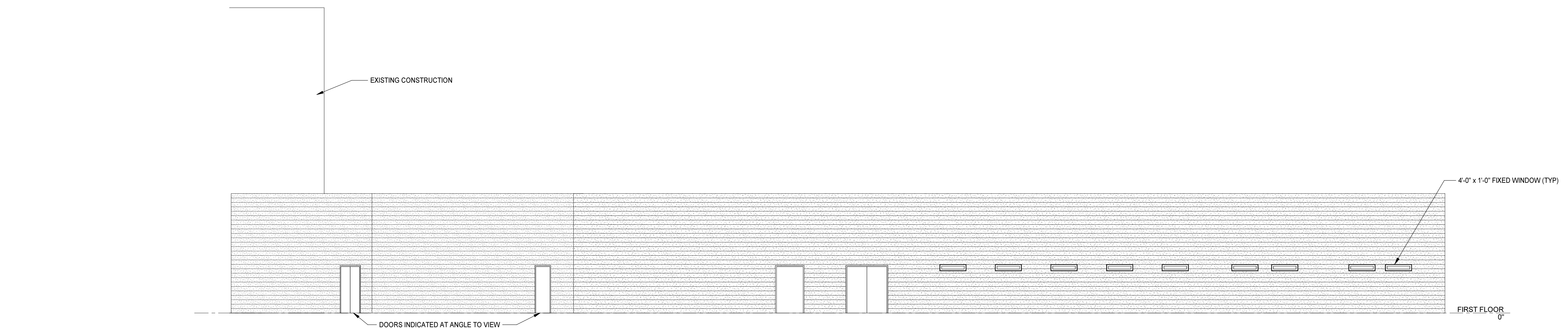
MOSELEYARCHITECTS

3200 NORFOLK STREET, RICHMOND, VA 23230
PHONE (804) 794-7555 FAX (804) 355-5690
MOSELEYARCHITECTS.COM

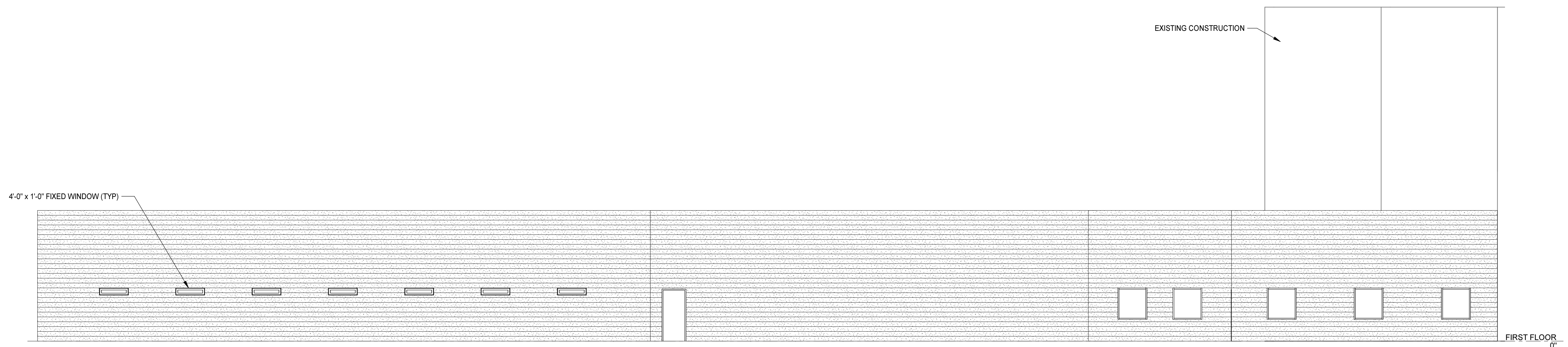
A2.1

A4.1 BUILDING ELEVATIONS

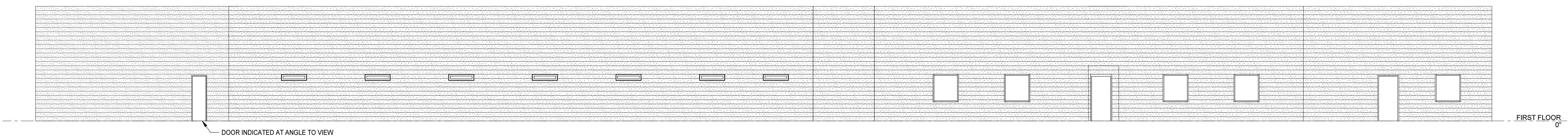
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3 NORTH ELEVATION
A1.0 A4.1
1/8" = 1'-0"



2 SOUTH ELEVATION
A1.0 A4.1
1/8" = 1'-0"



1 WEST ELEVATION
A1.0 A4.1
1/8" = 1'-0"

PROJECT NO.	DATE
590266	NOVEMBER 4, 2021
REVISIONS	
DATE	DESCRIPTION

**PLANNING STUDY
For the
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THE MIDDLE RIVER REGIONAL JAIL**

**SECTION IX
Staffing and Operating Budget**

IX. STAFFING AND OPERATING BUDGET

This section of the study contains planned staffing and a six-year operating budget for the expansion of the regional jail. No rated capacity increase is proposed as part of the expansion. The expansion will operate under the direction of the Middle River Regional Jail Authority.

This section includes narrative lists staff positions by administrative area; complete staffing chart with relief factors, stating position, staff assignments, hours worked and functional areas of responsibility; a section setting forth staff salaries and benefits costs and a six-year operating cost estimate for the facility.

Since the rated capacity of the jail is not increasing, it is not anticipated that the jail will receive any increased funding from the Compensation Board. The below summarizes the staff which may inhabit expanded or renovated portions of the facility.

A. STAFFING

Staffing the regional jail expansion will require the following positions by function.

Central Administration

- Assistant Superintendent - Responsible for all operations of the facility, including security, financial and administrative functions.
- Finance Director - Responsible for the overall accounting, human resources, and finance activities at the facility
- Human Resources Manager - Responsible for the hiring, training, and benefits management of all staff personnel at the facility
- Purchasing Technician - Responsible for the day-to-day purchasing activities and coordination with supplier and vendors to the facility
- Accountant Technician – Responsible for day-to-day accounting and finance activities at the facility
- Accounting Technician – Responsible for assisting with day-to-day accounting and finance activities at the facility

Support

- Food Service Workers (Cooks) - assist in preparation of meals.
- Warehouse/Maintenance Officers – schedule routine and ongoing physical plant maintenance functions.

Medical and Mental Health

- RN/LPN - responsible for medical duties including coordination with doctor and dentist, daily medical call, control of medications, and distribution of medications.

- Mental Health Worker - responsible for mental health duties including coordination with security staff, assessment of inmates, and treatment of inmates at the facility.

Staffing Requirements – Expansion

The staffing layout for the expanded regional jail is summarized in the table on the following page to serve as an example for a final staffing configuration. The posts/positions are listed by shift and the “relief factor” is applied to determine the number of full-time employees required. The derivation of the relief factor is described following the staffing table. The regional jail expansion will have no increase in rated capacity and therefore no increased funding from the Compensation Board is anticipated to fund these positions.

Relief Factor Derivation - A *post* defines a place/function that must be constantly manned for a specified time period. For some positions, constant coverage for a specified time period is not required. However for security posts, the “inmate supervision tasks” requires manning the post for a specified time period such as 24 hours per day, 365 days per year. An example of a post that would normally require coverage for 24 hours per day, 365 days per year is a control room post.

An officer has approximately 2,080 paid hours per year; however, the officer is not available for work assignments for the total 2,080 hours. The officer will not be available for assignment to a security post when on leave (vacation, sick and holidays) and when in mandated training (both off-site and on-site). To compensate for the time not available for assignment to a post, a relief factor is applied to the “post” to determine the number of officers required to “fully staff” the post. The relief factor for a 12 hour post is 1.25, which results in the requirement for 5 FTE positions for a single 24 hour/7 days a week security post. Positions requiring coverage for a 40 hour work week do not require a relief factor. The “1.25” relief factor is applied to the number of 24/7 posts to determine the manpower required to staff the post.

The Jail will utilize a 12-hour shift for most of the security posts, and a standard 8-hour shift for those administrative and support posts that are not primarily security posts.

Middle River Regional Jail: EXAMPLE Layout of Staffing Configuration for Expansion											
Function	Title	Security?		40 Hr. Week	Shift A		Shift B		Total	Relief Factor	FTE
		yes	no		Day	Night	Day	Night			
Administration	Assistant Superintendent	✓		1					1	1.00	1
	Finance Director - Finance		✓	1					1	1.00	1
	Human Resources Manager - Finance		✓	1					1	1.00	1
	Purchasing Technician - Finance		✓	1					1	1.00	1
	Accountant/Technician - Finance		✓	1					1	1.00	1
	Accounting/Technician - Finance		✓	1					1	1.00	1
	Subtotal			6	0	0	0	0	10		6
Support	Food Service										
	Cook - Food Production Workers		✓		2		2		4	1.00	4
	Warehouse/Maintenance Corporal	✓			4		2		6	1.00	6
	Warehouse /Maintenance Sergeant	✓		1					1	1.00	1
	Subtotal			1	5	0	5	0	11		11
Medical/MH	Medical Services/MH										
	Medical/MH Nurse RN		✓	4	0	0	0	0	4	1.00	4
	Mental Health Worker		✓	1	3	1	3	1	9	1.00	9
	Medical/MH Nurse LPN		✓	2	1	1	1	1	6	1.25	7
	Subtotal			7	4	2	4	2	19		20
Total Security											8
Total Non-security											29
Grand Total				18	9	2	9	2	40		37

Staffing – Salary and Benefit Costs

The table that follows displays positions required to staff the expansion and associated estimated salaries. All salaries are displayed are FY 2019 salaries based on existing salaries for the positions in the regional jail. Benefits displayed are reported existing benefits by salary and associated salaries for each position and include FICA, VRS, Life, and Health.

This table identifies each position and the number of FTEs required (as identified in the staffing configuration table previously), estimated salary, and the total salary associated with each position.

MRRJ Planned Staffing Configuration Personnel Services in FY-19 Dollars				
Position	Number of FTE Positions	MRRJ Salary	MRRJ Salary and Benefits	Total Compensation by Position
Asst Superintendent	1	\$105,000	\$135,145	\$135,145
Finance Director - FIN	1	\$105,000	\$135,145	\$135,145
Human Res Mgr - FIN	1	\$85,000	\$110,927	\$110,927
Purchasing Tech - FIN	1	\$45,000	\$62,491	\$62,491
Accountant/Tech - FIN	1	\$61,500	\$82,470	\$82,470
Accounting Tech - FIN	1	\$39,500	\$55,831	\$55,831
Cook	4	\$34,836	\$50,183	\$200,732
Warehse/Maint Sgt	1	\$55,644	\$75,379	\$75,379
Warehse/Maint Cpl	6	\$50,905	\$69,641	\$417,846
RN	4	\$69,593	\$92,270	\$369,081
MH Worker	9	\$40,000	\$56,436	\$507,924
LPN	7	\$55,801	\$75,569	\$528,983
Total	37			\$2,681,954

B. OPERATING BUDGET

A six-year operating budget commencing in FY 2024 is displayed in the table that follows. The expansion is assumed to be at full capacity in the first month of FY 2024. With the exception of Personnel Services which are calculated based on existing salary and fringe benefit data, the budget categories are those defined by the Virginia Compensation Board for all jails in the Commonwealth. Average daily population and per diem costs reported for FY 2018 data for the MRRJ form the basis for the figures and are inflated for a projected increase of 165 average daily population (ADP) inmates in FY 2024 (the increase between the reported FY-18 ADP and the projected FY-24 ADP). The assumptions upon which the budget figures are based are presented after the table.

<i>Middle River Regional Jail Estimated Six Year Operating Budget 23,200 SF Expansion</i>						
Budget Category	2024	2025	2026	2027	2028	2029
Personnel Services	N/A	N/A	N/A	N/A	N/A	N/A
Food Services	N/A	N/A	N/A	N/A	N/A	N/A
Health Services	N/A	N/A	N/A	N/A	N/A	N/A
Transportation	N/A	N/A	N/A	N/A	N/A	N/A
Direct Jail Support	N/A	N/A	N/A	N/A	N/A	N/A
Operating Capital	N/A	N/A	N/A	N/A	N/A	N/A
Contingency	N/A	N/A	N/A	N/A	N/A	N/A
New Building Operation	\$99,774	\$102,268	\$104,825	\$107,445	\$110,132	\$112,885
Total	\$99,774	\$102,268	\$104,825	\$107,445	\$110,132	\$112,885

A description for each of the budget categories is provided below along with a description of the estimating methodology.

Personnel Services - Not calculated as no increase in rated capacity.

Food Services - Not calculated as no increase in rated capacity.

Health Services - Not calculated as no increase in rated capacity.

Transportation - Not calculated as no increase in rated capacity.

Direct Jail Support - Not calculated as no increase in rated capacity.

Operating - Capital Accounts – Not calculated as no increase in rated capacity.

New Building Operation reflects 2019-20 SF building operating costs for utilities and maintenance including HVAC, electrical, plumbing and fire protection. Costs were adjusted by 2.5% per year beginning in 2021 to reflect 2024 through 2029 dollars.

**PLANNING STUDY
For the
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**SECTION X
Construction Cost Estimate**

A. TOTAL PROJECT BUDGET

X. CONSTRUCTION COST ESTIMATE

A. TOTAL PROJECT BUDGET

MIDDLE RIVER REGIONAL JAIL EXPANSION - COST ANALYSIS

VADOC PART I FORMULA

		refer to notes on following page
Expansion of Existing Jail		
MEANS COSTS (2021 BCCD \$320/SF with Q4 change notice 12.87%)	361.18 PER SF	4
MARSHALL & SWIFT MULTIPLIER	X 1.04	2
MEDIAN COST PER SQ FT	= 375.63 PER SF	
INFLATION (Nov 2021 to July 2023 - 20 months)	** 25.2964244 PER SF	
INFLATED MEDIAN COST PER SQ FT	400.93 PER SF	
	24,601 SF	5
MEDIAN CONSTRUCTION COST	\$9,863,144	
**3.125% to July 2022, 3.5% to July 2023 =	6.73%	3

PLANNING STUDY PROJECT ESTIMATE (EXCLUSIVE OF BONDS OR FINANCING)

PART I - PROJECT CONSTRUCTION COSTS

LOCALITY REQUESTED COST	VADOC ELIGIBLE COST
BUILDING CONSTRUCTION COST	\$9,863,144
SITEWORK (0.64286 ACRES @ \$350,000/ACRE = \$225,000)	\$225,000
PART I PROJECT CONSTRUCTION COSTS SUBTOTAL:	\$10,088,144

PART II - PROJECT SPECIFIC COSTS

~CREDIT FOR COST OF MAINTENANCE & WAREHOUSE	-\$852,713	6
WATER HEATER UPGRADE	\$1,100,000	9
LIGHTING UPGRADE	\$2,200,000	10
RENOVATION OF EXISTING JAIL - PUBLIC LOBBY	\$30,070	11
RENOVATION OF EXISTING JAIL - VISITATION	\$139,920	13
RENOVATION OF EXISTING JAIL - MENTAL HEALTH ADMIN	\$126,280	14
RENOVATION OF EXISTING JAIL - FOOD SERVICES	\$98,560	15
UTILITY RELOCATION	\$100,000	17

PART II PROJECT SPECIFIC COSTS SUBTOTAL: \$2,942,116

PART III - OTHER PROJECT COSTS

A/E FEES (8% PART I + PART II CREDITS)	\$738,834	
A/E FEES (12% PART II - PART II CREDITS)	\$455,380	
CBCP / PLANNING STUDY	\$139,515	
VALUE ENGINEERING STUDY	\$50,000	
FF&E (\$20/SF) INCLUDING COST OF SERVICES	\$584,296	18
COMMUNICATIONS/DATA EQUIPMENT (\$1/SF)	\$30,114	
TEST BORINGS/TESTING/SPEC INSP (1% of Construction)	\$100,881	
SURVEY, TOPO & UTILITY LOCATOR	\$30,000	
PRINTING & REPRODUCTION	\$10,000	
PERMITS, FEES & CONNECTION CHARGES (1% of Construction)	\$130,303	
PART III OTHER COSTS SUBTOTAL:	\$2,269,323	

CONTINGENCY (8% OF PART I AND PART II) \$1,042,421

TOTAL CONSTRUCTION COSTS: \$16,342,004

TOTAL PROJECT COST : \$16,342,004

25% of TOTAL PROJECT COST \$4,085,501

Notes - Construction Cost Estimate

- 1 Not used.
- 2 Marshall & Swift multipliers of 1.04 for location of Winchester, VA (nearest Shenandoah Valley location)
- 3 Calculated based on a construction start date of January 2023; 12 months new construction. **Mid-Point of construction = July 2023** Inflation has been compounded per the following formula:
$$**3.125 \text{ to July 2022, } 3.5\% \text{ to July 2023} = (1.03125 * 1.035) - 1 = 6.73\%$$
- 4 Cost from Costworks with RS Means data for median unit cost for detention (2021) of \$320 / SF – multiplied by the RS Means City Cost Index for 2021 Q4 for Roanoke VA 12.87% (nearest Shenandoah Valley location)
- 5 24,601 SF as programmed
Indicated SF for Expansion = 24,601 SF = 20,402 SF as proposed for Jail expansion + 4,199 SF as programmed (825 SF + 2992 SF x 1.1 = 4199 SF) for Maintenance Warehouse
- 6 Credit is the square footage of the Maintenance/Warehouse (825+2992 square feet) x Overall grossing factor (1.1) x (expansion SF cost divided by 2) x (-1)
- 7 Not used.
- 8 Not used.
- 9 Cost is 200,000 SF X \$6/SF
- 10 Cost is 200,000 SF X \$11/SF
- 11 Cost is 150 SF X half the value of Expansion Inflated Median Cost Per Sq Ft
- 12 Not used.
- 13 Cost is 1272 SF X \$110/SF
- 14 Cost is 2296 SF X \$55/SF
- 15 Cost is 896 SF X \$110/SF
- 16 Not used.
- 17 Cost is for relocation of utilities west of the building
- 18 Cost is for (20,402 SF Expansion + 4199 SF Maint and Warehouse + 150 SF Lobby office + 1272 SF Visitation + 2296 SF Mental health office + 896 SF Food service) x \$20/SF

**PLANNING STUDY
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**SECTION XI
Project Schedule for Planning
and Construction**

XI. PROJECT SCHEDULE FOR PLANNING AND CONSTRUCTION

Based upon approval by the Commonwealth of Virginia and the decision by the Authority to proceed, the following schedule is projected for the project:

Submit Revised CBCP Planning Study to VDOC for Approval	November, 2021
Board of Local and Regional Jail Approval **	NLT December, 2021
Legislative Approval of Project	April, 2022
Notice to Proceed - Design	January, 2022
Complete Schematic Design	March, 2022
Complete Design Development	June, 2022
Complete Construction Documents	September, 2022
Advertise for Bids	November, 2022
Receive Bids	December, 2022
Notice to Proceed (Construction)	January, 2023
Midpoint of Construction	July, 2023
Substantially Complete Construction of Addition*	January, 2024
Deliver Inmates in New Building	February, 2024
Final Completion of New Building Project	February, 2024

NOTES:

* Mid-point of construction is July 2023.

** The Authority will forward a Resolution and letter from the Middle River Regional Jail Authority Board for inclusion in Appendix C. A draft placeholder letter is included with this submission.

**PLANNING STUDY
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**SECTION XII
Appendices**

A. CBCP NEEDS ASSESSMENT

Introduction

This project is a proposed addition to the existing Middle River Regional Jail (MMRJ). The original jail was opened in 2006 with a rated capacity of 396 inmates. The current inmate population averages in excess of 900 inmates. The projected inmate population is 1244-1283 inmates by the year 2029. This project consists of the construction of a 400-bed minimum custody addition, expansion of kitchen storage, laundry facilities, new medical infirmary, as well as renovations and equipment replacement in the existing jail.

General Description

The Middle River Regional Jail, located on 28 acres in Staunton, Virginia, was constructed in 2005-2006. Opened in 2006, the Jail incarcerates adult male and female detainees under the direction of the Middle River Authority Board representing the cities of Harrisonburg, Staunton and Waynesboro, and the counties of Augusta and Rockingham. The facility is approximately 212,000 square feet; functions as the only jail for the localities of Staunton, Augusta and Waynesboro, and services as a second jail for Rockingham and Harrisonburg.

MRRJ was built to alleviate the need for additional space due to the increasing jail population at the Augusta County Jail, formerly located in downtown Staunton, VA. MRRJ enabled inmates that were formerly being held in other facilities due to overcrowding to return back to their local jurisdiction. The facility was designed to house 396 detainees but has operated for many years with a daily population in excess of 800 inmates which is accomplished through double and triple “bunking”.

This report is organized to present the information required in a Community-Based Corrections Plan in the following sequence.

Section I	Includes a brief introduction to the study; a summary of findings and a description of the organization of the report.
Section II	Presents an analysis of the confined inmate population and inmate population trends.
Section III	Contains a description of the criminal justice system serving the regional Service Area. Information concerning crime and arrest trends are presented.
Section IV	Presents a summary of the physical layout of the existing jai.
Section V	Presents an overview of community-based programs intended to provide options to incarceration.
Section VI	Presents a population projection methodology, and an inmate ¹ population forecast to the year 2029.

¹ Throughout this document, the terms “detainee” and “inmate” are used interchangeably.

Summary of Findings

Inmate Population Trends

- The Regional Jail, with a current operating capacity of 396, has consistently operated over rated capacity for many years. Rated capacity is designated by the Department of Corrections and refers to the number of detainees that should be housed in the facility according to Standards.
- Upwards of 1,000 people have been held in a facility designed for 396. While some of the support spaces were originally designed for a larger population in anticipation of inmate population growth, housing space, support space and staffing allotments assume a population substantially below the number of inmates in the Jail.
- The total inmate population at MRRJ increased from 628 in FY-07, to 928 in FY-19 – an increase of 300 inmates (48% growth). On average, the inmate population at MRRJ increased by 25 per year between 2007 – 2019 – an average increase of 4.2% each year.
- Over the past four fiscal years, the total population increased from an average of 744 inmates in FY-16, to an average of 928 in FY-19 – an increase of 184 inmates (24.7%) and 8.5% per year.
- Since FY-07, the inmate population from Augusta, Staunton and Waynesboro combined grew by 198 – an increase of 50.6%. Over the past five years the number of detainees from these localities increased 20.8%, from an average of 489 in FY-15, to 590 in FY-19.
- Rockingham and Harrisonburg have housed detainees at MRRJ and the local facility for many years. Between 2010 - 2019, the total number of inmates (housed in the local and regional jails) increased from an average of 333 to 583 – a total increase of 251 inmates and 75.3% growth over the nine-year period. Over the past five years the number of inmates increased 30.7%, from an average of 446 in CY-15, to 583 in CY-19.
- The total inmate population for whom Rockingham and Harrisonburg are responsible, currently is approximately 600. This population has increased by 6.7% per year since 2010 – from 309 at the end of 2010 to 580 in May 2019.
- At any given time, approximately 25% of the jail population are females and 75% are males. 40% of the female population are from Rockingham, 13% are from Staunton and 13% (each) are from Staunton and Waynesboro.
- On average, the number of pretrial detainees housed in the regional jail averaged between 221 – 460 per year between 2013-2019.

Reported Crime

- Reported crime in the jail Service Area (the combined localities) increased from 10,224 in 2014, to 10,655 in 2017 – a total increase of 4.2% over the four - year period. In 2017, there were just under 900 crimes reported to law enforcement each month; on average just under 30 criminal offenses per day.

Middle River Regional Jail Needs Assessment

- There were 431 more crimes reported in 2017 than were reported 2014. Noteworthy increases in the combined localities are reported for the offenses of Embezzlement (Other Forcible Sex Offenses +75.9%, N=153); Auto Theft (+60.8%, N=209); Drug/Narcotics (+31%, N=2,295); and Weapon Law Violations (+ 39.7%, N= 250).
- Approximately 37% of reported crime in the Service Area is reported by the City of Harrisonburg; Rockingham and Harrisonburg combined reported half of the total. Augusta County (+24%) and Rockingham County (+12.6%) reported the greatest increase in reported crime between 2014-2017; Harrisonburg (-8.1%) and Waynesboro ((+0.7%) reported the lowest crime increase.

Reported Arrests

- A total of 35,204 adult arrests were made by law enforcement in the member localities over the five-year period ending 2017 – an average of approximately 8,800 per year and 183 arrests each month.
- Overall, in the combined Service Area, adult arrests reported in 2014 were 6.7% higher the number reported in 2017; there were 9,382 adult arrests in 2014, and 8,755 arrests in 2017.
- Over the last five years the most frequently occurring specific reported arrest offense categories have been: (1) “All Other” (38.5% of the total); (2) Drug and Narcotics (12.4% of the total), (3) Drunkenness (10.7% of the total), (4) Larceny (8.3%) and (5) Simple Assault (7.3% of the total).
- Arrests for the most serious offenses involving crimes against persons (murder, manslaughter, forcible rape, robbery and aggravated assault) increased by 15.8% over the last five years.
- Arrests for Drug/Narcotic Offenses, Weapons Law Violations, Simple Assault and Vandalism offenses all increased between 2014 – 2017. Over the five-year period ending 2017, arrests for Alcohol offenses, Larceny and Burglary all declined.

Existing Jail Facility

- The Middle River Regional Jail, located on 28 acres in Staunton, Virginia, was constructed in 2005-2006. Opened in 2006, the Jail incarcerates adult male and female detainees under the direction of the Middle River Authority Board representing the cities of Harrisonburg, Staunton and Waynesboro, and the counties of Augusta and Rockingham. The facility is approximately 212,000 square feet; functions as the only jail for the localities of Staunton, Augusta and Waynesboro, and services as a second jail for Rockingham and Harrisonburg.
- The facility opened in 2006 and has a rated capacity of 396, as established by the Department of Corrections. In the Fall of 2019, the facility was operating with a contingent of approximately 150 jail officers and civilian personnel. There currently are 27 housing units, consisting of 8 dormitory units and 19 cell blocks.

- The MRRJ is a one level structure (with mezzanines in housing areas), with an aggregate floor space (jail only) of approximately 212,000 SF. The single-story facility contains housing units arranged in four general housing areas (generally separated by corridors), consisting of 18 cell blocks and eight dormitories.
 - Eighteen (18) cell blocks range in size from 600 SF – 2,760 SF and are rated to house between 12 – 47 inmates each in single cells.
 - Each cell has two permanent beds.
 - There are eight (8) dormitories ranging in size from 1,020 SF to 1,530 SF; rated to house 108 inmates and regularly accommodating over 250
 - Work release/minimum custody/trustee dorm areas consist of (2) two rooms which currently have 54 beds
 - Original plans included approximately 30 beds for Work release/minimum custody/trustees
 - Twenty-nine (29) spaces are designated as booking/holding/intake space.
 - Seven (7) medical beds and thirty-eight (38) restricted housing (segregation) beds.
 - Intake, food service, laundry inmate property, administration, program and recreation areas are centrally located.
- Eighteen cell blocks have a rated capacity of 276 detainees; all cells are designed for a single inmate; there are approximately 550 inmates in single cells. Eight dormitories are designed to accommodate 108 detainees and generally house over 260 persons.
- The Jail is operating with an average daily population that far exceeds its design capacity. As such, many areas of the Jail are not sufficient. The density of the inmates in general population housing, combined with the absence of program and recreation space contributes to the potential for management problems.
- In general, the administrative and program space, food services, laundry, medical, and mechanical/electrical areas are not sufficient for the number of persons housed in Jail. An overview of existing space by functional area follows below.

Housing Areas

1. Due to the large number of Community Custody inmates, both Work Force and Work Release, these inmates are being housed in the pod designed for female inmates. These inmates exit to the outside near the Loading Dock, away from the front of the building.
2. Due to the larger than anticipated number of female inmates, the area of the jail designed to house maximum custody male inmates is being used to house minimum, medium, and maximum custody female inmates.
3. Due to the large number of cells needed to treat inmates for medical and health related issues, approximately half of the area designed as restricted housing (segregation) cells is being used to house inmates undergoing medical care.
4. The housing pods originally designed for classification, adjacent to the jail's intake area, are being used to house maximum custody inmates due to them being displaced by the large female inmate population.

Middle River Regional Jail Needs Assessment

5. There is an inadequate supply of cells separate from general housing to serve inmates with mental health needs and deliver the treatment and services they need.
6. Existing yard walls between Housing Units may need to be torn down/ re-configured for new construction and/or to provide additional exit discharge refuge areas.

Administrative Office Area

1. The administrative office area functions well but is lacking in space to accommodate the additional staff and jail authority member meetings.
2. The facility needs additional administrative office space to house current and future staff as the jail authority grows.
3. There is currently no space large enough to serve as a muster room or to hold Jail Authority Board meetings.
4. At the existing "west" Visiting Booths, the secure perimeter dividing wall was not built to save money. If an expansion occurs, these visiting booths will be needed and secure walls with visiting windows will need to be built
The existing kitchen was designed to provide food for the rated capacity of 396 inmates, plus a future planned expansion to a capacity of approximately 600 inmates.

Kitchen

1. The kitchen is crowded as more staff and inmate labor are working in the kitchen to meet the demand for meal preparation.
2. The prep space is filled up with carts, prep tables, and inmate workers which limits visibility for officers to monitor the inmate kitchen labor force.
3. The prep area limits the ability of the kitchen staff to meet the jail's meal schedule.
4. The food storage areas including freezer space, refrigerator space, and dry storage are not large enough to provide the necessary food storage for the current and anticipated future inmate population. The facility needs approximately 50% more space to store food for the current population and approximately 100% more storage space to store food for the population anticipated in 10 years.

Laundry

1. The laundry facilities are currently operating around 22 hours per day to keep up washing uniforms, and linens.
2. The washers and dryers are wearing out more quickly because of the heavier use.
3. The laundry is struggling to meet the need due to lack of workspace, insufficient quantity of machines, and hours in the day.

Medical

1. The medical area has four cells. The jail's restricted housing (segregation) area is being used to house, on average, 12 additional inmates with medical needs for a total of 16 inmates in the medical area on average.
2. Additional dedicated medical cells are needed to provide the healthcare services necessary and to keep the restricted housing (segregation) area available for its intended use.

Middle River Regional Jail Needs Assessment

3. The current medical treatment area was designed to function as a clinic. Ideally this would be designed

Intake and Property Storage

1. The property storage area is full and needs to be expanded to house the current and anticipated future inmate population. Suggestion has been made to convert two Male Dorms down the hall into additional Property Storage, but equivalent dormitory space would need to be added elsewhere.
2. As reported, Intake and Intake Holding areas are adequate, despite the increased population.
3. Magistrate is currently located in Intake with no direct public access. Suggestion has been made to relocate the Magistrate's office to the Community Custody area, which does have public access. Access from Intake could be provided by converting one Intake holding cell to a sallyport that leads to the new Magistrate's area.

Inmate Population Planning Forecast

- Two separate forecasts were completed: one for Augusta, Waynesboro and Staunton inmates housed in MRRJ, and one for total Rockingham-Harrisonburg inmates housed in the local jail and MRRJ. An assumption was made that Rockingham-Harrisonburg will continue to house 300 locally and all others will be in MRRJ.
- Augusta, Waynesboro and Staunton MRRJ jail beds are projected increase from 610 in 2022, to 737 in 2029 – an average annual increase of 2.7% per year; the total Rockingham-Harrisburg inmate population is projected to increase from 646 in 2022, to 841 in 2029 – an average annual increase of 3.7% per year.
- Based on the assumption that Rockingham-Harrisonburg will continue to house 300 of their inmate population locally and all others in MRRJ, the MRRJ planning forecast projects the Regional Jail population to increase from 956 in 2022, to 1,278 in 2029 – a total of 310 inmates, 44 per year and an average of 4.1% per year.
- The final MRRJ planning forecast projects the MRRJ population to increase from 956 in 2022, to 1,278 in 2029 – a total of 310 inmates, 44 per year and an average of 4.1% per year.

Middle River Regional Jail Needs Assessment

Middle River Regional Jail Forecast of MRRJ Total Population Assuming Assuming Rockingham-Harrisonburg Jail Holds 300 Inmates Fiscal Year								
	2022	2023	2024	2025	2026	2027	2028	2029
Jul	935	976	1,021	1,065	1,110	1,155	1,199	1,244
Aug	942	984	1,029	1,073	1,118	1,162	1,207	1,251
Sep	950	991	1,036	1,080	1,125	1,170	1,214	1,259
Oct	953	995	1,039	1,084	1,129	1,173	1,218	1,262
Nov	953	994	1,039	1,084	1,128	1,173	1,218	1,262
Dec	945	985	1,031	1,075	1,120	1,164	1,209	1,254
Jan	951	991	1,037	1,081	1,126	1,171	1,215	1,260
Feb	962	1,003	1,048	1,092	1,137	1,182	1,226	1,271
Mar	970	1,012	1,057	1,102	1,146	1,191	1,236	1,280
Apr	973	1,016	1,060	1,105	1,149	1,194	1,239	1,283
May	971	1,015	1,059	1,104	1,149	1,193	1,238	1,282
Jun	966	1,011	1,056	1,100	1,145	1,189	1,234	1,278
Average	956	998	1,043	1,087	1,132	1,176	1,221	1,266
Minimum	935	976	1,021	1,065	1,110	1,155	1,199	1,244
Maximum	973	1,016	1,060	1,105	1,149	1,194	1,239	1,283
Change								
Percent	--	4.4%	4.5%	4.3%	4.1%	3.9%	3.8%	3.6%
Number	--	42	45	44	45	45	45	44

Section II

Inmate Population Trends and Confined Population

Regional Jail Inmate Population Trends

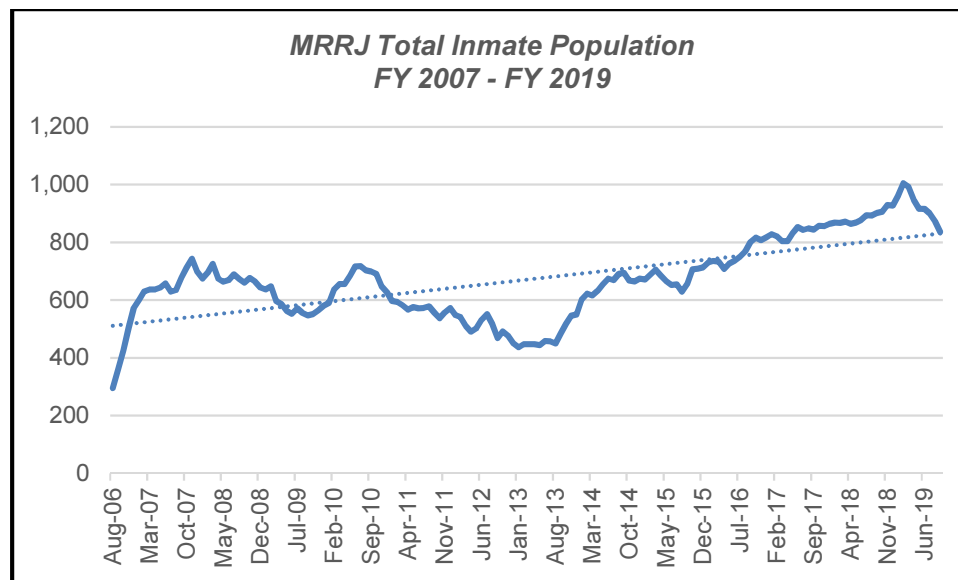
The other sections of this report summarize the condition and incarceration capacity of the Regional Jail, and review crime and arrest trends. This section summarizes increases in the number of offenders held in the Jail; documents changes in the composition of the confined population, and present profiles of persons confined and admitted to the jail.

- The Regional Jail, with a current operating capacity of 396, has consistently operated over rated capacity for many years. Rated capacity is designated by the Department of Corrections and refers to the number of detainees that should be housed in the facility according to Standards.
- Upwards of 1,000 people have been held in a facility designed for 396. While some of the support spaces were originally designed for a larger population in anticipation of inmate population growth, housing space, support space and staffing allotments assume a population substantially below the number of inmates in the Jail.

Middle River Regional Jail													
Monthly Total Inmate Population: Percentage of Rated Capacity													
	<i>Fiscal Year</i>												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jul	127%	188%	168%	143%	164%	141%	120%	138%	168%	179%	204%	216%	235%
Aug	145%	177%	163%	146%	159%	145%	114%	139%	170%	180%	207%	218%	234%
Sep	152%	170%	161%	149%	151%	138%	110%	152%	169%	184%	209%	219%	243%
Oct	159%	176%	164%	161%	150%	137%	113%	157%	174%	186%	207%	219%	254%
Nov	161%	183%	151%	166%	147%	129%	113%	156%	178%	185%	203%	220%	251%
Dec	161%	170%	148%	166%	143%	124%	113%	160%	173%	179%	203%	218%	239%
Jan	162%	167%	142%	173%	145%	127%	112%	165%	168%	184%	210%	219%	231%
Feb	166%	169%	140%	181%	144%	134%	116%	170%	165%	186%	215%	221%	231%
Mar	159%	174%	144%	181%	144%	139%	115%	169%	165%	189%	213%	226%	228%
April	160%	170%	140%	178%	146%	131%	114%	174%	159%	194%	214%	226%	220%
May	171%	167%	138%	177%	141%	118%	122%	175%	166%	202%	213%	228%	211%
Jun	180%	171%	139%	174%	136%	124%	131%	169%	179%	206%	216%	229%	--

- The total inmate population at MRRJ increased from 628 in FY-07, to 928 in FY-19 – an increase of 300 inmates (48% growth).
- On average, the inmate population at MRRJ increased by 25 per year between 2007 – 2019 – an average increase of 4.2% each year.

Middle River Regional Jail Needs Assessment



- Over the past four fiscal years, the total population increased from an average of 744 inmates in FY-16, to an average of 928 in FY-19 – an increase of 184 inmates (24.7%) and 8.5% per year.

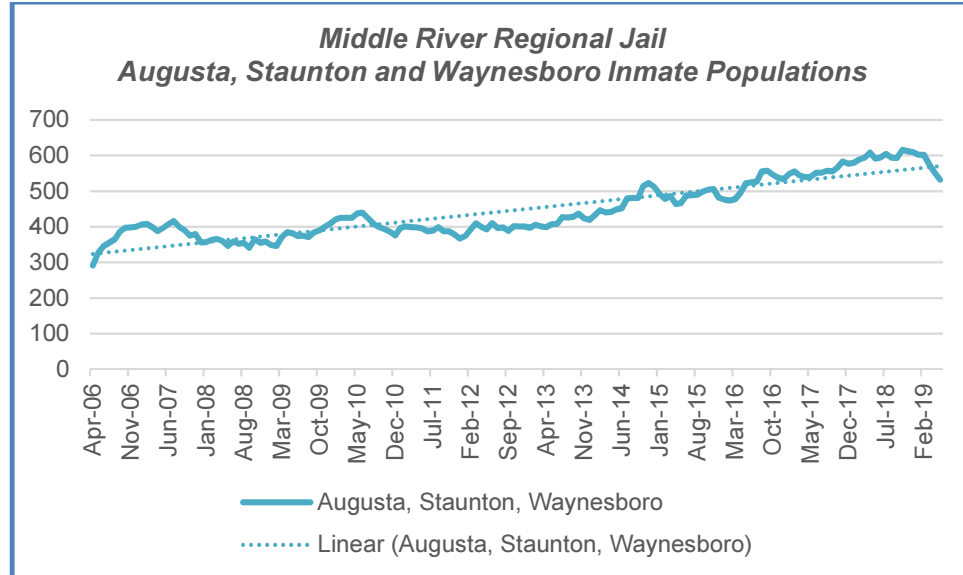
Middle River Regional Jail Needs Assessment

Middle River Regional Jail Monthly Total Inmate Population													
Fiscal Year													
Date	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jul	504	743	665	565	649	557	476	546	664	709	807	856	930
Aug	573	699	644	580	628	573	451	550	674	713	818	864	927
Sep	601	674	637	590	597	548	436	602	671	730	829	868	961
Oct	630	695	648	637	594	541	447	622	688	735	821	867	1005
Nov	637	725	597	656	582	511	447	616	706	733	804	872	993
Dec	637	674	586	656	567	491	447	632	686	708	804	864	946
Jan	643	663	563	684	576	503	444	655	666	727	832	869	916
Feb	658	669	553	717	571	532	458	675	652	737	853	877	916
Mar	629	689	571	718	572	551	457	669	655	750	843	894	901
April	635	672	556	703	578	518	450	691	629	769	849	893	873
May	678	660	547	699	557	468	484	694	657	801	844	902	836
Jun	712	677	551	691	537	492	518	668	707	816	857	906	--
Ave	628	687	593	658	584	524	460	635	671	744	830	878	928
Min	504	660	547	565	537	468	436	546	629	708	804	856	836
Max	712	743	665	718	649	573	518	694	707	816	857	906	1005
Change													
Number		59	-94	65	-74	-60	-64	175	36	73	86	48	50
Percent		9.3%	14%	10.9%	11.2%	10.3%	12.3%	38.2%	5.7%	10.8%	11.6%	5.7%	5.7%

Augusta, Staunton and Waynesboro

- Since FY-07, the inmate population from Augusta, Staunton and Waynesboro combined grew by 198 – an increase of 50.6%.
- Over the past five years the number of detainees from these localities increased 20.8%, from an average of 489 in FY-15, to 590 in FY-19.

Middle River Regional Jail Needs Assessment



- Over the past five fiscal years, the number of inmates from Augusta, Staunton and Waynesboro increased from an end of year population of 452 in June 2014, to 532 in May 2019 – an increase of 80 inmates and 17.7% growth.

Middle River Regional Jail Monthly Inmate Population: Augusta, Staunton, Waynesboro Only													
Date	Fiscal Year												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jul	355	416	352	375	424	389	396	427	480	489	527	552	605
Aug	364	400	355	371	409	399	398	426	481	490	555	557	594
Sep	386	390	341	385	399	387	388	428	481	499	557	555	593
Oct	397	375	365	390	394	387	402	437	514	504	546	566	616
Nov	398	379	355	400	386	378	401	423	523	506	537	583	612
Dec	400	356	359	409	376	367	401	419	512	482	534	577	609
Jan	406	357	349	421	396	374	397	432	492	476	548	580	602
Feb	408	363	346	425	401	393	405	447	478	474	555	588.5	602
Mar	399	366	370	425	399	410	401	440	486	477	544	594	575
April	387	360	385	425	398	400	399	441	464	495	539	608	552
May	396	346	382	438	395	393	407	448	466	522	540	591	532
Jun	407	359	374	439	387	410	408	452	488	525	552	595	--
Ave	392	372	361	409	397	391	400	435	489	495	545	579	590
Min	355	346	341	371	376	367	388	419	464	474	527	552	532
Max	408	416	385	439	424	410	408	452	523	525	557	608	616
Change													
Percent	--	-5.0%	-3.0%	13.2%	-2.8%	-1.6%	2.5%	8.7%	12.4%	1.3%	10.0%	6.3%	2.0%
Number		-19.7	-11.2	47.5	-11.6	-6.4	9.7	34.8	53.8	6.2	49.6	34.4	11.3

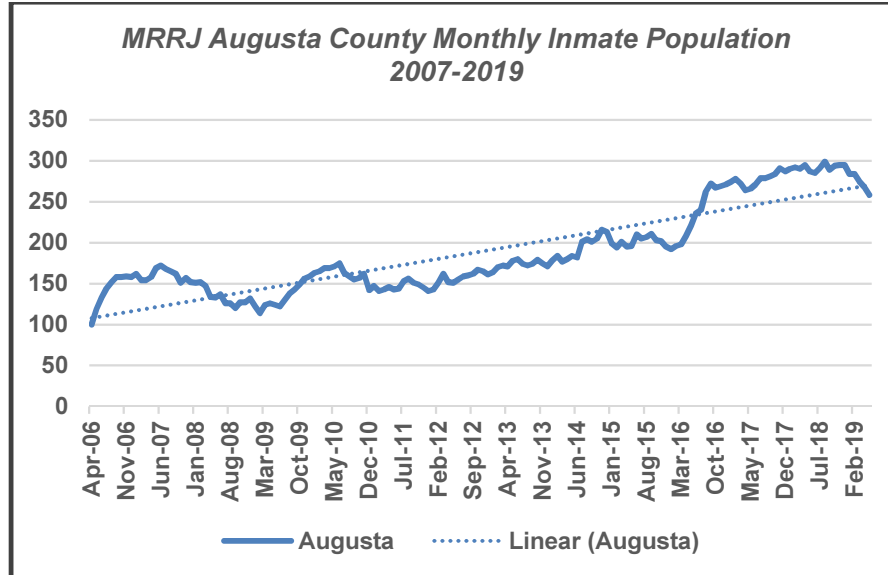
Middle River Regional Jail Needs Assessment

- By locality the jail populations are displayed in the following tables and graphs.

Augusta County

Middle River Regional Jail Augusta County Monthly Inmate Population													
Fiscal Year													
Date	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jul	144	168	126	130	163	153	159	174	201	205	240	279	291
Aug	152	165	126	138	159	156	160	172	204	207	262	279	299
Sep	158	162	120	143	155	151	162	174	201	211	272	281	289
Oct	158	151	127	149	157	149	167	179	205	203	267	284	294
Nov	159	157	127	156	162	145	165	175	216	202	269	291	295
Dec	158	152	132	159	142	141	161	171	213	195	271	287	295
Jan	162	151	122	163	147	143	164	178	199	192	274	290	284
Feb	154	152	114	165	141	151	170	184	194	196	278	292	284
Mar	154	147	124	169	143	162	172	177	201	198	272	290	275
April	158	134	126	169	146	152	171	180	195	208	264	295	268
May	169	133	124	171	143	151	178	184	196	221	266	287	258
Jun	172	137	122	175	144	155	180	182	210	236	271	285	--
Ave	158	151	124	157	150	151	167	178	203	206	267	287	285
Min	144	133	114	130	141	141	159	171	194	192	240	279	258
Max	172	168	132	175	163	162	180	184	216	236	278	295	299
Change													
Num	--	-7	-27	33	-7	1	17	10	25	3	61	20	-2
Per	--	-4.7%	-17.6%	26.6%	-4.5%	0.4%	11.1%	6.0%	14.3%	1.6%	29.6%	7.3%	-0.7%

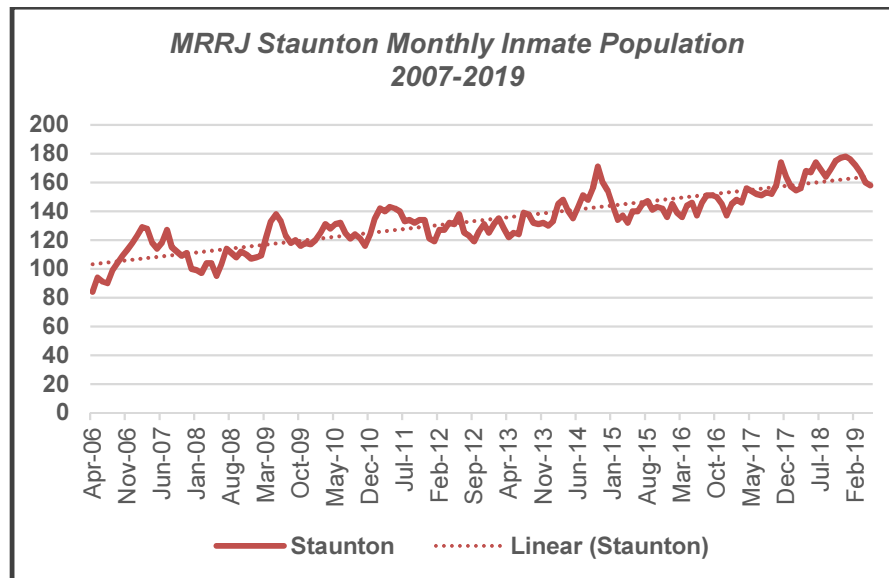
Middle River Regional Jail Needs Assessment



City of Staunton

Middle River Regional Jail City of Staunton Monthly Population													
Fiscal Year													
Date	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jul	90	127	114	123	125	133	125	139	151	145	146	151	169
Aug	99	115	111	118	121	134	123	138	148	147	151	153	164
Sep	104	112	108	120	124	132	119	132	156	141	151	152	169
Oct	109	109	112	116	121	134	126	131	171	143	150	158	175
Nov	113	111	110	118	116	134	131	132	160	142	145	174	177
Dec	118	100	107	117	124	121	125	130	154	136	137	164	178
Jan	123	99	108	120	135	119	131	133	144	145	145	157	176
Feb	129	97	109	125	142	127	135	145	134	139	148	154.5	172
Mar	128	104	122	131	140	127	128	148	137	136	146	156	167
April	118	104	133	128	143	132	122	140	132	144	156	168	160
May	114	95	138	131	142	131	125	135	140	146	154	167	158
Jun	118	103	133	132	140	138	124	143	140	137	152	174	--
Ave	114	106	117	123	131	130	126	137	147	142	148	161	170
Min	90	95	107	116	116	119	119	130	132	136	137	151	158
Max	129	127	138	132	143	138	135	148	171	147	156	174	178
Change													
Num	--	-7	11	6	8	-1	-4	11	10	-6	7	12	9
Per	--	-6.4%	10.1%	5.3%	6.4%	-0.7%	-3.1%	8.7%	7.4%	-3.7%	4.7%	8.3%	5.5%

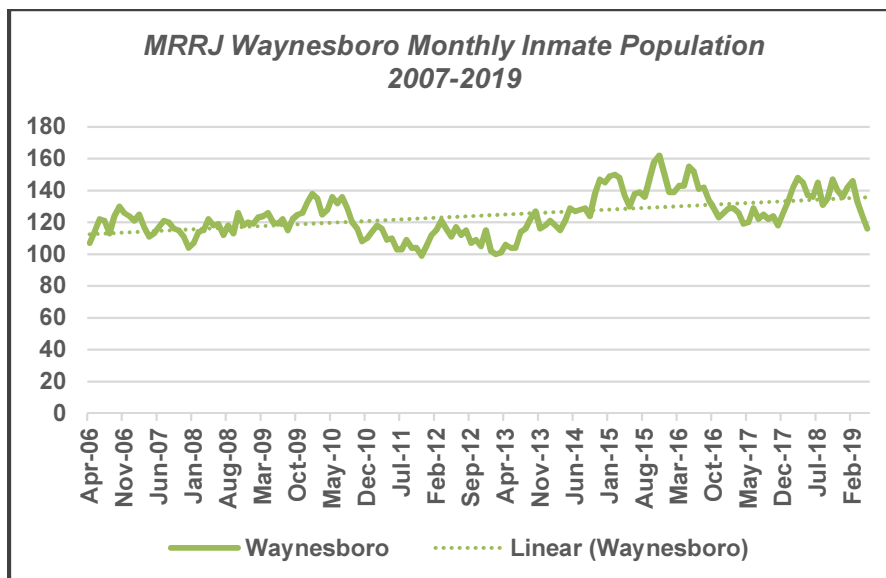
Middle River Regional Jail Needs Assessment



City of Waynesboro

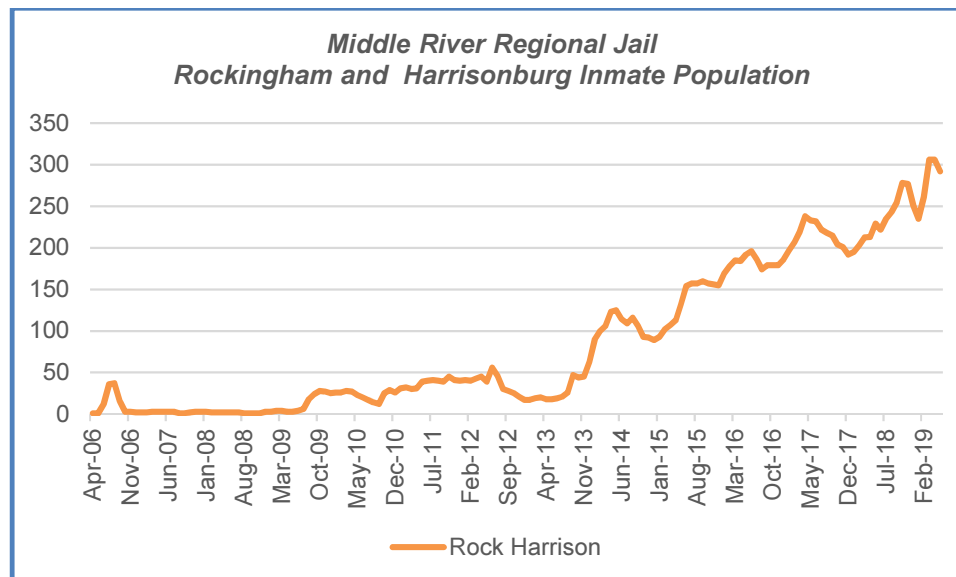
<p style="text-align: center;">Middle River Regional Jail City of Waynesboro Monthly Inmate Population</p>													
Fiscal Year													
Date	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jul	121	121	112	122	136	103	112	114	128	139	141	122	145
Aug	113	120	118	115	129	109	115	116	129	136	142	125	131
Sep	124	116	113	122	120	104	107	122	124	147	134	122	135
Oct	130	115	126	125	116	104	109	127	138	158	129	124	147
Nov	126	111	118	126	108	99	105	116	147	162	123	118	140
Dec	124	104	120	133	110	105	115	118	145	151	126	126	136
Jan	121	107	119	138	114	112	102	121	149	139	129	133	142
Feb	125	114	123	135	118	115	100	118	150	139	129	142	146
Mar	117	115	124	125	116	121	101	115	148	143	126	148	133
April	111	122	126	128	109	116	106	121	137	143	119	145	124
May	113	118	120	136	110	111	104	129	130	155	120	137	116
Jun	117	119	119	132	103	117	104	127	138	152	129	136	--
Ave	120	115	120	128	116	110	107	120	139	147	129	132	136
Min	111	104	112	115	103	99	100	114	124	136	119	118	116
Max	130	122	126	138	136	121	115	129	150	162	142	148	147
Change													
Num	--	-5	5	8	-12	-6	-3	14	18	8	-18	3	4
Per	--	-4.2%	4.1%	6.9%	-9.6%	-5.3%	-2.7%	12.8%	15.2%	6.1%	-12.3%	2.0%	3.4%

Middle River Regional Jail Needs Assessment



Rockingham and Harrisonburg

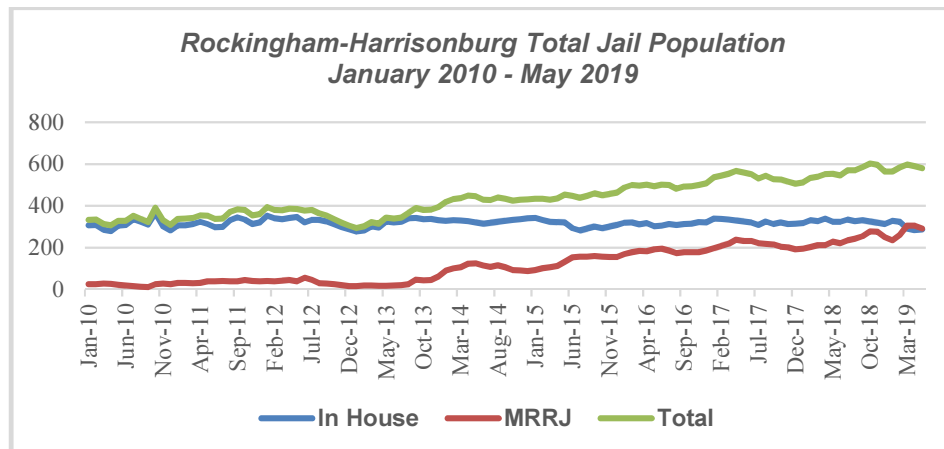
- Rockingham and Harrisonburg have housed detainees at MRRJ and the local facility for many years. Between 2010 - 2019, the total number of inmates (housed in the local and regional jails) increased from an average of 333 to 583 – a total increase of 251 inmates and 75.3% growth over the nine-year period.
- Over the past five years the number of inmates increased 30.7%, from an average of 446 in CY-15, to 583 in CY-19.



Middle River Regional Jail Needs Assessment

- Approximately half of the inmate population from Rockingham and Harrisonburg are held in MRRJ. The other half continue to be held in the local facility.

Monthly Inmate Population: Rockingham and Harrisonburg Inmates House In MRRJ										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jan	26	31	41	17	90	93	169	197	195	235
Feb	26	32	40	19	100	102	178	207	203	261
Mar	28	30	43	20	106	107	185	219	212.55	306
Apr	27	31	45	18	123	113	184	238	213	306
May	23	39	39	18	125	132	192	233	229	292
Jun	20	40	56	19	114	154	196	232	222	
Jul	17	41	46	21	109	157	186	222	235	
Aug	14	40	30	26	116	157	174	218	243	
Sep	12	39	28	47	106	160	179	215	255	
Oct	25	45	25	44	93	157	179	204	278	
Nov	29	41	21	45	92	156	179	201	277	
Dec	26	40	17	63	89	155	186	192	251	
Average	23	37	36	30	105	137	182	215	234	280
Maximum	29	45	56	63	125	160	196	238	278	306
Minimum	12	30	17	17	89	93	169	192	195	235
Change										
Number	--	15	-2	-6	76	32	45	33	20	46
Percent		64.5%	-4.0%	-17.2%	253.8%	30.1%	33.1%	17.9%	9.1%	19.4%



Middle River Regional Jail Needs Assessment

- The total inmate population for whom Rockingham and Harrisonburg are responsible, currently is approximately 600. This population has increased by 6.7% per year since 2010 – from 309 at the end of 2010 to 580 in May 2019.

<i>Monthly Inmate Population: Rockingham and Harrisonburg Inmates Housed in MRRJ and the Local Jail</i>										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jan	334	338	394	294	419	435	488	536	513	564
Feb	335	339	381	302	432	434	500	545	535	585
Mar	314	343	379	323	437	430	497	554	540	598
Apr	307	355	387	315	450	436	502	568	552	590
May	329	353	386	344	447	454	494	559	553	580
Jun	329	338	377	340	429	448	502	552	546	
Jul	353	340	380	344	429	440	500	530	570	
Aug	338	372	364	367	440	448	482	544	570	
Sep	322	384	353	390	434	460	493	528	586	
Oct	391	380	337	381	426	451	494	525	603	
Nov	331	354	319	383	429	457	501	515	597	
Dec	309	361	305	395	431	463	508	507	565	
Average	333	355	364	348	433	446	497	539	561	583
Maximum	391	384	394	395	450	463	508	568	603	598
Minimum	307	338	305	294	419	430	482	507	513	564
Change										
Number	--	22	9	-15	85	13	50	42	22	22
Percent		6.6%	2.5%	-4.2%	24.5%	3.0%	11.3%	8.4%	4.1%	4.0%

Profile of Persons Confined in the Jail

This section of the report contains trends in the average daily population of the local Jail by confinement status for the calendar years 2013-2019 as reported by the State Compensation Board database.

Inmate Population Trends by Confinement Status

- At any given time, approximately 25% of the jail population are females and 75% are males. 40% of the female population are from Rockingham, 13% are from Staunton and 13% (each) are from Staunton and Waynesboro.

MRRJ Gender Breakout			
	Male	Female	Total
Augusta	238	59	297
Rockingham	162	97	259
Harrisonburg	24	24	48
Staunton	165	32	197
Waynesboro	102	31	133
Total	691	243	934
	74.0%	26.0%	100.0%

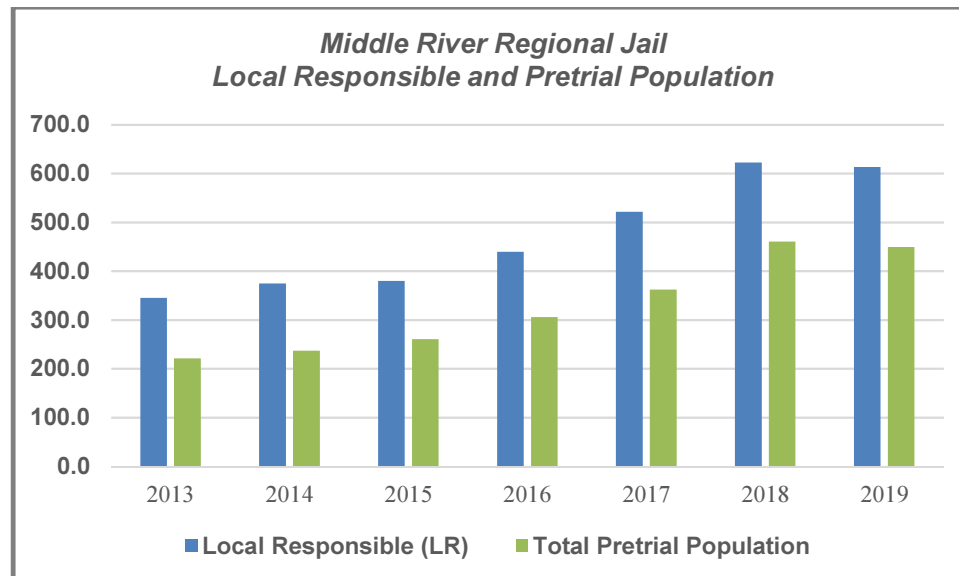
Note: October 2019

The data that follows provides a summary breakout of Jail population in the regional jail for the years 2013 – 2019 (through May 2019). Note that this data was provided by the Compensation Board and a single detainee could be placed in more than one category.

Middle River Regional Jail Inmate Population Housed in the Regional Jail by Confinement Status by Year							
	Calendar Year						
Category	2013	2014	2015	2016	2017	2018	2019
Rated Capacity	396	396	396	396	396	396	396
Pretrial	221.2	236.9	260.8	305.5	362.5	460.5	449.2
Local Responsible (LR)	345.0	374.5	380.2	439.7	521.6	622.5	613.4
Sentenced Misdemeanor	55.0	60.4	48.6	50.1	51.7	49.8	46.8
State Responsible (SR)	215.2	298.2	315.6	359.9	337.7	303.2	277.3
Total Ave. Daily Population	444.5	576.2	701.0	704.4	770.5	833.3	852.6

- On average, the number of pretrial detainees housed in the regional jail averaged between 221 – 460 per year between 2013-2019.
- The exhibit that follows displays the trend in the number of inmates in the local facility classified in “local responsible” and “pretrial” statuses between 2013 – 2019.

Middle River Regional Jail Needs Assessment



- A number of inmates that are in “pretrial” status but are awaiting sentencing on additional charges. A breakout of these inmates is displayed in the following table.

Middle River Regional Jail Pretrial Inmates Housed in the Regional Jail by Status by Year							
	Calendar Year						
Category	2013	2014	2015	2016	2017	2018	2019
Rated Capacity	396	396	396	396	396	396	396
Total Pretrial Population							
Pre-Trial Probation Violators	13.9	40.2	71.4	77.7	60.7	54.1	60.2
Pre-Trial Other Pre-trial	120.3	112.7	100.5	124.4	178.2	245.5	229.0
Pre-Trial Parole Violators	0.5	0.0	0.3	0.5	0.1	0.0	0.6
Pending Charges Pending SR	31.4	27.2	25.8	37.8	41.8	48.3	48.1
Pending Charges Pending LR	55.2	56.8	62.8	65.3	81.6	112.6	111.3

- A detailed profile of persons confined in the local facility is displayed in the table that follows.

Middle River Regional Jail Needs Assessment

Middle River Regional Jail Detailed Profile of Confined Persons (2013-2019)							
Status/Year	2013	2014	2015	2016	2017	2018	2019
Pre-Trial Probation Violators	13.9	40.2	71.4	77.7	60.7	54.1	60.2
Pre-Trial Parole Violators	0.5	0.0	0.3	0.5	0.1	0.0	0.6
Pre-Trial Other Pre-trial	120.3	112.7	100.5	124.4	178.2	245.5	229.0
Pending Charges Pending SR	31.4	27.2	25.8	37.8	41.8	48.3	48.1
Pending Charges Pending LR	55.2	56.8	62.8	65.3	81.6	112.6	111.3
LR Felon A	63.6	70.8	64.8	78.9	102.2	103.2	109.3
LR Felon B	1.0	0.1	0.0	0.0	0.0	0.0	0.0
Sentenced Misdemeanant	55.0	60.4	48.6	50.1	51.7	49.8	46.8
HEM	0.0	0.0	0.0	0.0	1.3	4.0	2.7
Total Forecasting LR Population	340.8	368.1	374.2	434.5	517.8	617.6	608.0
LR Male	271.1	292.6	280.6	333.7	400.2	479.6	442.7
LR Female	69.7	75.5	93.6	100.8	117.6	138.0	165.3
Ordinance Pre-Trial	1.0	1.3	1.0	0.9	0.4	0.7	1.0
Ordinance Pending Charges	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Ordinance Post-Trial	3.1	4.9	5.0	4.3	3.4	4.2	4.4
Total LR Population	345.0	374.5	380.2	439.7	521.6	622.5	613.4
SR Felon A	213.7	297.2	314.5	355.9	336.0	293.1	265.1
SR Felon B	0.0	0.0	0.0	1.5	0.2	0.0	0.0
SR Held by Agreement	1.5	1.0	1.2	2.5	1.5	1.5	0.0
Total SR Population	215.2	298.2	315.6	359.9	337.7	303.2	277.3
SR Male	195.5	261.4	266.5	315.1	291.7	266.6	241.3
SR Female	19.7	36.8	49.1	44.9	46.0	36.6	36.0

Section III
Criminal Justice System Trends

Overview

This section of the report presents an analysis of the criminal justice system data associated with reported crime, crime rates and adult arrests for the MRRJ Jail Service Area – Augusta and Rockingham Counties, the cities of Harrisonburg, Staunton and Waynesboro. The information in this section of the report was obtained from the *Crime in Virginia* report published annually by the Virginia State Police. The annual reports from the State Police are based on information submitted by City, County, University Police Departments and Sheriff's Departments. This section is organized as follows:

- Section A, presents an overview of crime trends and law enforcement resources for the four year period ending in calendar year 2017.
- Section B, presents trends in adult arrests over a four year period for both Group A (more serious) and Group B (less serious) offenses.

Section A – Reported Crime, Crime Rates & Law Enforcement Personnel

The State Police reports both “Crime Incidents” and “Crime Offenses.” Multiple offenses can be associated with a single incident. When the number of incidents are expressed as a “rate/100,000 population”, it is referred to as the incident rate. The difference is that the rate, by incorporating the civilian population into the calculation, allows comparisons with prior years (by adjusting for population changes) and to other jurisdictions (by adjusting for differences in the total civilian population).

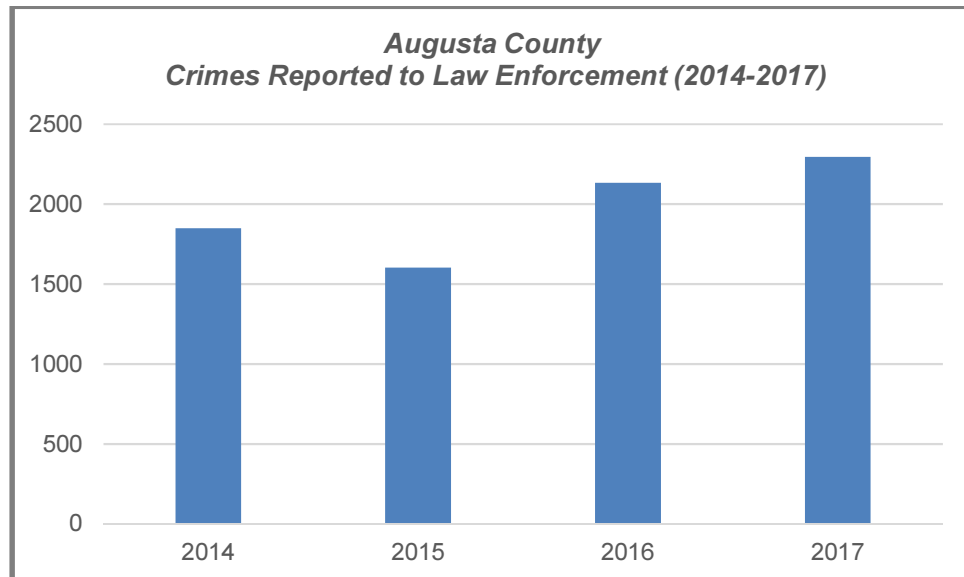
Reported Crime

Summaries of crime trends are displayed for each of member localities separately and the combined Regional Jail service area, in the text, tables and Exhibits that follow.

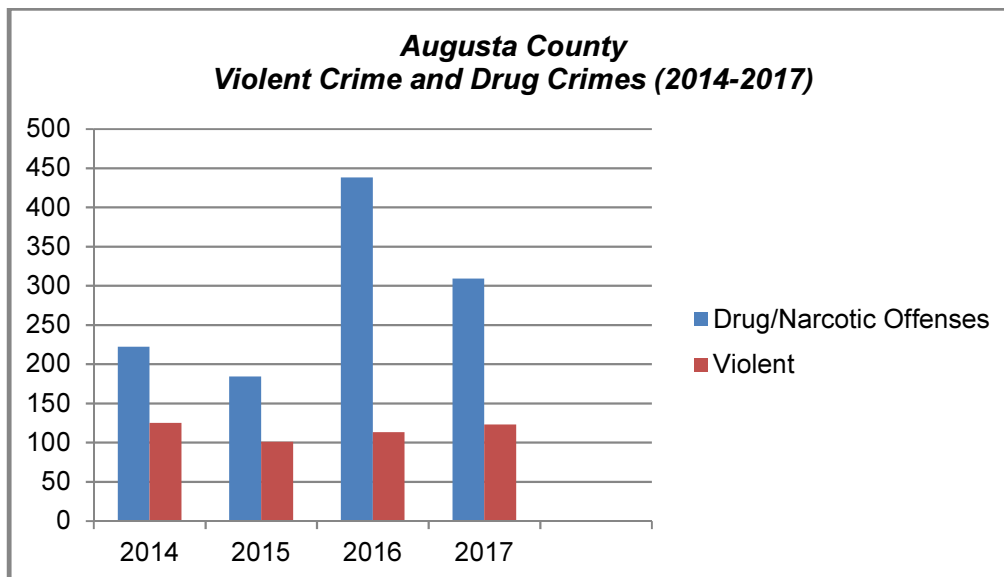
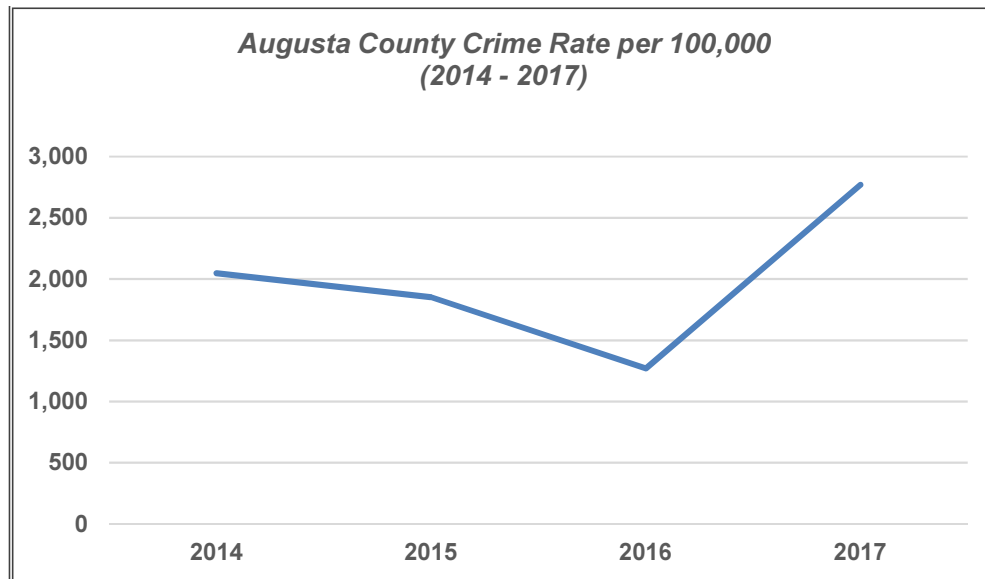
Augusta County

- Five offense categories represented approximately 74% of all reported crime in Augusta County in 2017 – the most recent year for which data are available. The top five most frequently reported criminal offenses in 2013 were: Larceny (26.3% of offenses); Simple Assault (14.6% of offenses); Drugs (13.5%); Vandalism (10.3%); Burglary (10.5%), and Fraud (9.7% of offenses).
- Reported Drug and Narcotic offenses represented 13.5% of reported offenses in 2017 – a marginally higher percentage of total reported crime in 2014.
- The number of crime incidents reported to law enforcement in the County increased from 1,646 in 2014, to 2,251 in 2017 – an increase of 605 incidents and 36.8% growth.
- Noteworthy increases in reported offense categories over the past five years are observed in the categories of Simple Assault (+176%), “Other Forcible Sex Offenses (+220 %), Auto Theft (119.5%), Burglary (+35%), Drug/Narcotic Offenses (39.2%), and Weapon Law Violations (24.1%).

- The number of criminal offenses reported to law enforcement has trended upward each year since 2015; on average reported crime increased by 9.1% between 2014-2019.



- The number of violent criminal offenses (murder, rape, robbery, kidnapping, and forcible sex offenses) reported to law enforcement remained fairly constant between 2014-2017.
- The crime incident rate per 100,000 residents in Augusta County increased from 2,047 in 2014, to 2,769 in 2017 – an increase of 722 incidents per year and 35.2% growth.



Middle River Regional Jail Needs Assessment

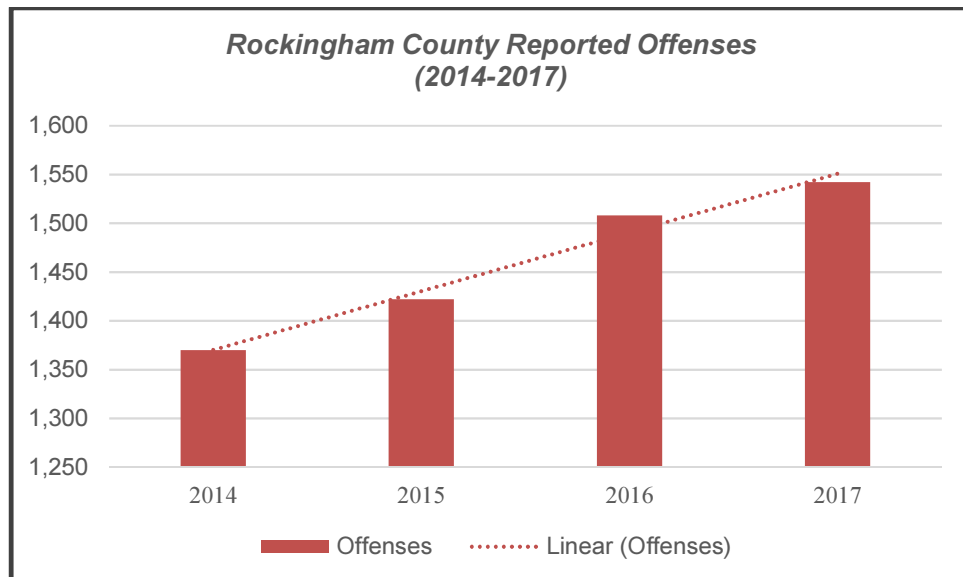
Augusta County 2014 - 2017 Serious Crimes Reported to Law Enforcement					
	2014	2015	2016	2017	Change
Population	74,642	74,881	74,809	75,013	0.5%
Incident Rate/100,000	2,047.1	1,852	1,270	2,769	35.3%
Total Incidents	1,646	1,486	1,942	2,251	36.8%
Murder/Manslaughter	4	4	4	1	-75.0%
Kidnapping/Abduction	11	14	15	14	27.3%
Forcible Rape	9	9	8	15	66.7%
Other Forcible Sex Offenses	10	9	31	32	220.0%
Robbery	8	7	3	5	-37.5%
Aggravated Assault	83	58	52	56	-32.5%
Simple Assault	121	147	350	334	176.0%
Arson	3	0	9	6	100.0%
Extortion	2	0	0	3	--
Burglary	157	163	202	212	35.0%
Larceny	594	498	484	603	1.5%
Auto Theft	41	43	44	90	119.5%
Forgery	73	39	26	48	-34.2%
Fraud	211	143	172	222	5.2%
Embezzlement	20	23	12	15	--
Stolen Property	4	2	11	2	-50.0%
Vandalism	227	213	193	237	4.4%
Drug/Narcotic Offenses	222	184	438	309	39.2%
Non-forcible Sex Offenses	6	0	3	1	--
Pornography	7	9	14	15	114.3%
Gambling	0	0	0	0	--
Prostitution	0	0	2	1	--
Bribery	0	0	0	0	--
Weapon Law Violation	36	37	60	73	102.8%
Total	1,849	1,602	2,133	2,294	24.1%
Change		-247	531	161	

Middle River Regional Jail Needs Assessment

Augusta County 2014 - 2017 Percent of Serious Crimes Reported to Law Enforcement				
	2014	2015	2016	2017
Population	74,642	74,881	74,809	75,013
Incident Rate/100,000	2,047	1,852	1,270	2,769
Total Incidents	1,646	1,486	1,942	2,251
Murder/Manslaughter	0.2%	0.2%	0.2%	0.0%
Kidnapping/Abduction	0.6%	0.9%	0.7%	0.6%
Forcible Rape	0.5%	0.6%	0.4%	0.7%
Other Forcible Sex Offenses	0.5%	0.6%	1.5%	1.4%
Robbery	0.4%	0.4%	0.1%	0.2%
Aggravated Assault	4.5%	3.6%	2.4%	2.4%
Simple Assault	6.5%	9.2%	16.4%	14.6%
Arson	0.2%	0.0%	0.4%	0.3%
Extortion	0.1%	0.0%	0.0%	0.1%
Burglary	8.5%	10.2%	9.5%	9.2%
Larceny	32.1%	31.1%	22.7%	26.3%
Auto Theft	2.2%	2.7%	2.1%	3.9%
Forgery	3.9%	2.4%	1.2%	2.1%
Fraud	11.4%	8.9%	8.1%	9.7%
Embezzlement	1.1%	1.4%	0.6%	0.7%
Stolen Property	0.2%	0.1%	0.5%	0.1%
Vandalism	12.3%	13.3%	9.0%	10.3%
Drug/Narcotic Offenses	12.0%	11.5%	20.5%	13.5%
Non-forcible Sex Offenses	0.3%	0.0%	0.1%	0.0%
Pornography	0.4%	0.6%	0.7%	0.7%
Gambling	0.0%	0.0%	0.0%	0.0%
Prostitution	0.0%	0.0%	0.1%	0.0%
Bribery	0.0%	0.0%	0.0%	0.0%
Weapon Law Violation	1.9%	2.3%	2.8%	3.2%
Total	100.0%	100.0%	100.0%	100.0%

Rockingham County

- The most commonly reported crimes in the Rockingham County in 2017 were Drug/Narcotic Offenses (31.8%), Larceny (18% of total offenses), Vandalism (10.2% of total offenses), Simple Assault (8.6%), and Burglary (6.2% of offenses) – these five offense categories represented 75% of all crime reported in 2017.
- The proportion of Drug and Narcotic offenses reported to law enforcement in the City are somewhat lower than in Rockingham County; in 2013, Drug offenses represented 22.4% of crime in the County, while in the City Drug offenses represented 18.0% of total crime.
- The total number of criminal offenses reported to law enforcement each year in the County increased between 2014 – 2017 by an average of 57 offenses per year and a total of 172 offenses over the four-year period.



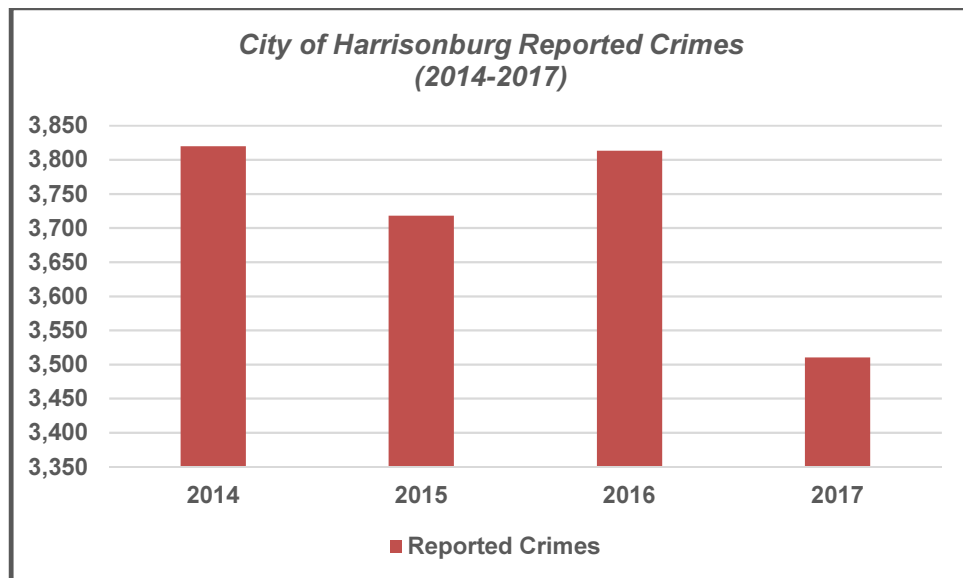
Middle River Regional Jail Needs Assessment

Rockingham County 2014 - 2017 Serious Crimes Reported to Law Enforcement					
	2014	2015	2016	2017	Change
Population	59,656	59,711	60,281	60,860	2.0%
Incident Rate/100,000	1,582	1,594	1,544	1,612	1.9%
Total Incidents	1,145	1,190	1,213	1,266	10.6%
Murder/Manslaughter	3	0	1	1	-66.7%
Kidnapping/Abduction	5	2	7	5	0.0%
Forcible Rape	10	8	15	9	-10.0%
Other Forcible Sex Offenses	27	31	46	56	107.4%
Robbery	6	2	5	1	-83.3%
Aggravated Assault	43	32	46	28	-34.9%
Simple Assault	89	137	112	132	48.3%
Arson	8	3	6	5	-37.5%
Extortion	0	1	0	2	--
Burglary	142	108	114	95	-33.1%
Larceny	306	323	258	278	-9.2%
Auto Theft	17	29	29	38	123.5%
Forgery	25	18	36	32	28.0%
Fraud	118	78	95	115	-2.5%
Embezzlement	8	11	12	17	--
Stolen Property	14	28	19	15	7.1%
Vandalism	206	180	208	157	-23.8%
Drug/Narcotic Offenses	298	361	445	490	64.4%
Non-forcible Sex Offenses	1	0	4	1	--
Pornography	11	21	11	16	45.5%
Gambling	0	0	0	0	--
Prostitution	2	9	1	0	--
Bribery	0	0	0	0	--
Weapon Law Violation	31	40	38	49	58.1%
Total	1,370	1,422	1,508	1,542	12.6%
Change		52	86	34	

Rockingham County 2014 - 2017 Percent of Serious Crimes Reported to Law Enforcement				
	2014	2015	2016	2017
Population	59,656	59,711	60,281	60,860
Incident Rate/100,000	1,582	1,594	1,544	1,612
Total Incidents	1,145	1,190	1,213	1,266
Murder/Manslaughter	0.2%	0.0%	0.1%	0.1%
Kidnapping/Abduction	0.4%	0.1%	0.5%	0.3%
Forcible Rape	0.7%	0.6%	1.0%	0.6%
Other Forcible Sex Offenses	2.0%	2.2%	3.1%	3.6%
Robbery	0.4%	0.1%	0.3%	0.1%
Aggravated Assault	3.1%	2.3%	3.1%	1.8%
Simple Assault	6.5%	9.6%	7.4%	8.6%
Arson	0.6%	0.2%	0.4%	0.3%
Extortion	0.0%	0.1%	0.0%	0.1%
Burglary	10.4%	7.6%	7.6%	6.2%
Larceny	22.3%	22.7%	17.1%	18.0%
Auto Theft	1.2%	2.0%	1.9%	2.5%
Forgery	1.8%	1.3%	2.4%	2.1%
Fraud	8.6%	5.5%	6.3%	7.5%
Embezzlement	0.6%	0.8%	0.8%	1.1%
Stolen Property	1.0%	2.0%	1.3%	1.0%
Vandalism	15.0%	12.7%	13.8%	10.2%
Drug/Narcotic Offenses	21.8%	25.4%	29.5%	31.8%
Non-forcible Sex Offenses	0.1%	0.0%	0.3%	0.1%
Pornography	0.8%	1.5%	0.7%	1.0%
Gambling	0.0%	0.0%	0.0%	0.0%
Prostitution	0.1%	0.6%	0.1%	0.0%
Bribery	0.0%	0.0%	0.0%	0.0%
Weapon Law Violation	2.3%	2.8%	2.5%	3.2%
Total	100.0%	100.0%	100.0%	100.0%

City of Harrisonburg

- The most commonly reported crimes in the City of Harrisonburg in 2017 were Drug/Narcotic Offenses (24.5% of total offenses), Larceny Offenses (21.3%) Simple Assault (17.6%), Vandalism (13% of offenses) and Fraud (9.1%) – these five offense categories represented 85.6% of all crime reported in 2017.
- In 2014, Drug offenses represented 21.2% of crime in the City; in 2017 Drug Offenses represented 24.5% of the total.
- Reported crime decreased between 2014-2017 by 8.1%, from 3,820 in 2014 to 3,510 in 2017.

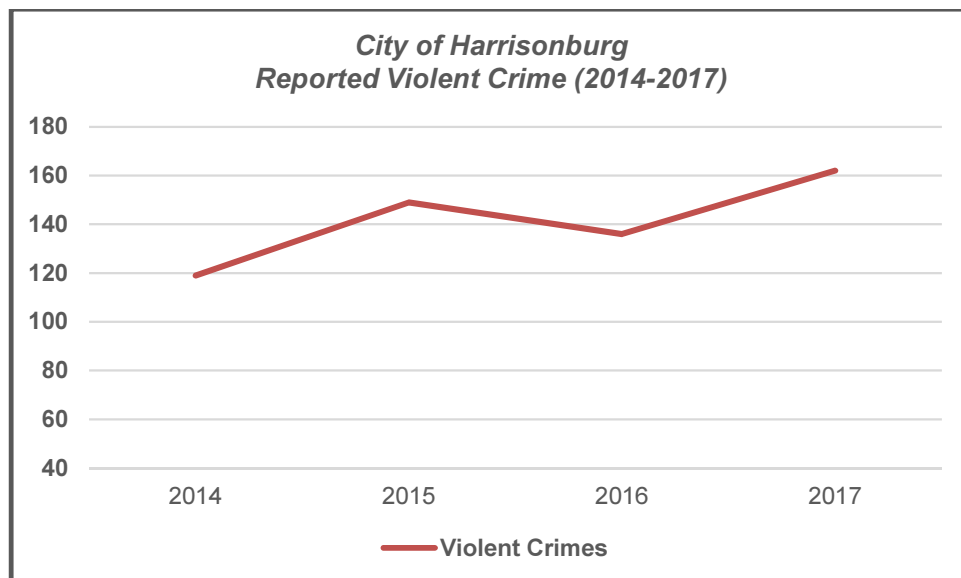


- The crime/incident rate per 100,000 population in the City of Harrisonburg declined from 3,142 incidents in 2014, to 2,894 incidents in 2017 – a decrease of 7.9%.

Middle River Regional Jail Needs Assessment

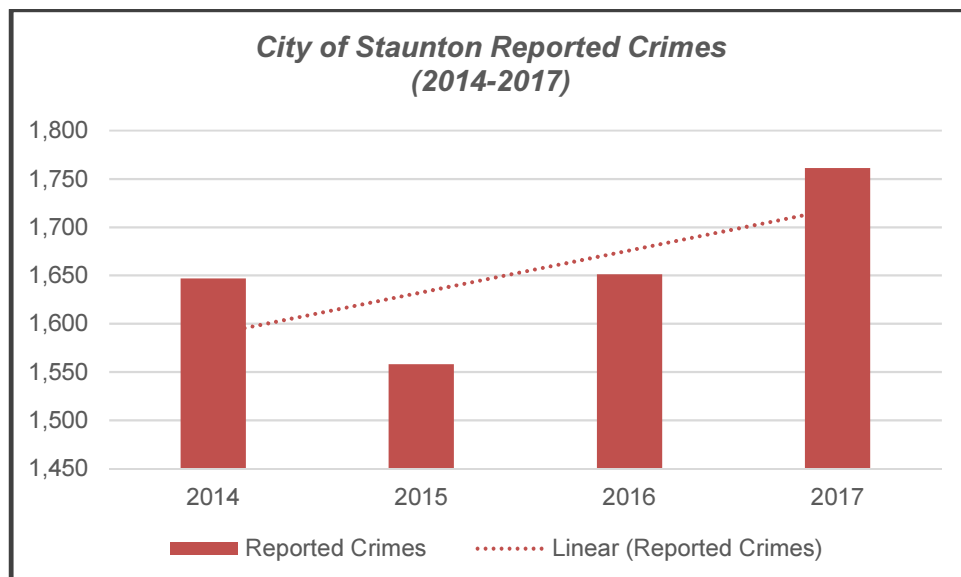
City of Harrisonburg 2014 - 2017 Serious Crimes Reported to Law Enforcement					
	2014	2015	2016	2017	Change
Population	52,612	53,875	54,224	54,689	3.9%
Incident Rate/100,000	5,550.0	5,424	5,300	4,643	-16.3%
Total Incidents	3,142	3,142	3,225	2,894	-7.9%
Murder/Manslaughter	0	1	2	3	--
Kidnapping/Abduction	8	9	8	16	100.0%
Forcible Rape	20	16	21	21	5.0%
Other Forcible Sex Offenses	9	23	12	16	77.8%
Robbery	11	12	29	12	9.1%
Aggravated Assault	71	88	64	94	32.4%
Simple Assault	660	629	774	619	-6.2%
Arson	3	3	1	3	0.0%
Extortion	0	2	0	2	--
Burglary	232	143	163	117	-49.6%
Larceny	907	1,057	902	748	-17.5%
Auto Theft	31	31	45	40	29.0%
Forgery	39	93	64	80	105.1%
Fraud	290	293	265	318	9.7%
Embezzlement	22	25	25	24	--
Stolen Property	7	9	4	8	14.3%
Vandalism	615	454	506	458	-25.5%
Drug/Narcotic Offenses	811	725	829	860	6.0%
Non-forcible Sex Offenses	1	0	0	0	--
Pornography	14	3	11	13	-7.1%
Gambling	0	0	0	0	--
Prostitution	3	28	14	2	--
Bribery	0	0	0	0	--
Weapon Law Violation	66	74	74	56	-15.2%
Total	3,820	3,718	3,813	3,510	-8.1%
Change		-102	95	-303	

City of Harrisonburg 2014 - 2017 Percent of Serious Crimes Reported to Law Enforcement				
	2014	2015	2016	2017
Population	52,612	53,875	54,224	54,689
Incident Rate/100,000	5,550	5,424	5,300	4,643
Total Incidents	3,142	3,142	3,225	2,894
Murder/Manslaughter	0.0%	0.0%	0.1%	0.1%
Kidnapping/Abduction	0.2%	0.2%	0.2%	0.5%
Forcible Rape	0.5%	0.4%	0.6%	0.6%
Other Forcible Sex Offenses	0.2%	0.6%	0.3%	0.5%
Robbery	0.3%	0.3%	0.8%	0.3%
Aggravated Assault	1.9%	2.4%	1.7%	2.7%
Simple Assault	17.3%	16.9%	20.3%	17.6%
Arson	0.1%	0.1%	0.0%	0.1%
Extortion	0.0%	0.1%	0.0%	0.1%
Burglary	6.1%	3.8%	4.3%	3.3%
Larceny	23.7%	28.4%	23.7%	21.3%
Auto Theft	0.8%	0.8%	1.2%	1.1%
Forgery	1.0%	2.5%	1.7%	2.3%
Fraud	7.6%	7.9%	6.9%	9.1%
Embezzlement	0.6%	0.7%	0.7%	0.7%
Stolen Property	0.2%	0.2%	0.1%	0.2%
Vandalism	16.1%	12.2%	13.3%	13.0%
Drug/Narcotic Offenses	21.2%	19.5%	21.7%	24.5%
Non-forcible Sex Offenses	0.0%	0.0%	0.0%	0.0%
Pornography	0.4%	0.1%	0.3%	0.4%
Gambling	0.0%	0.0%	0.0%	0.0%
Prostitution	0.1%	0.8%	0.4%	0.1%
Bribery	0.0%	0.0%	0.0%	0.0%
Weapon Law Violation	1.7%	2.0%	1.9%	1.6%
Total	100.0%	100.0%	100.0%	100.0%



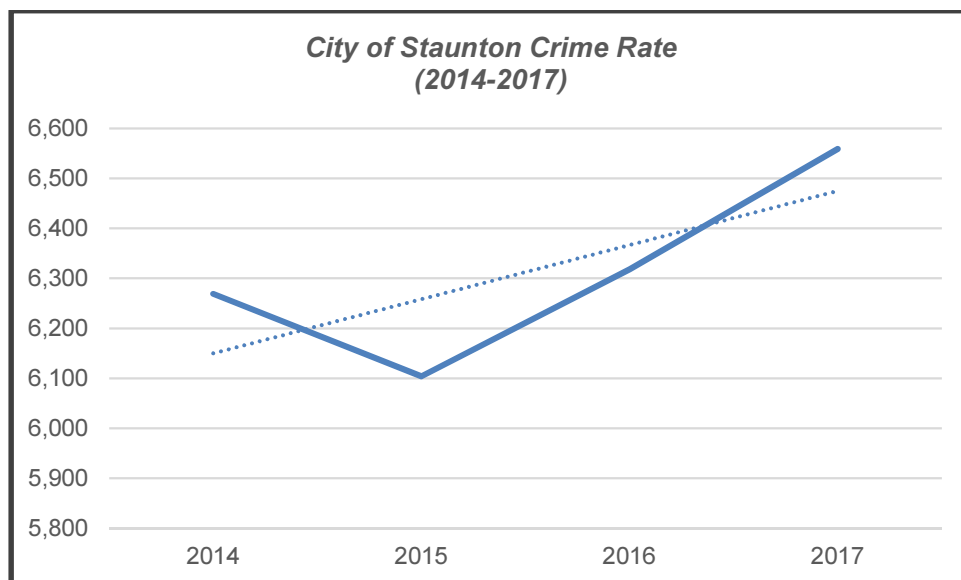
City of Staunton

- Between 2014 – 2017, total offenses reported to law enforcement increased from 1,647 in 2014 to 1,761 in 2017 – an increase of 114 offense and a 6.9% increase.
- Reported offenses increased by 203 and 13% percent between 2015-2017.

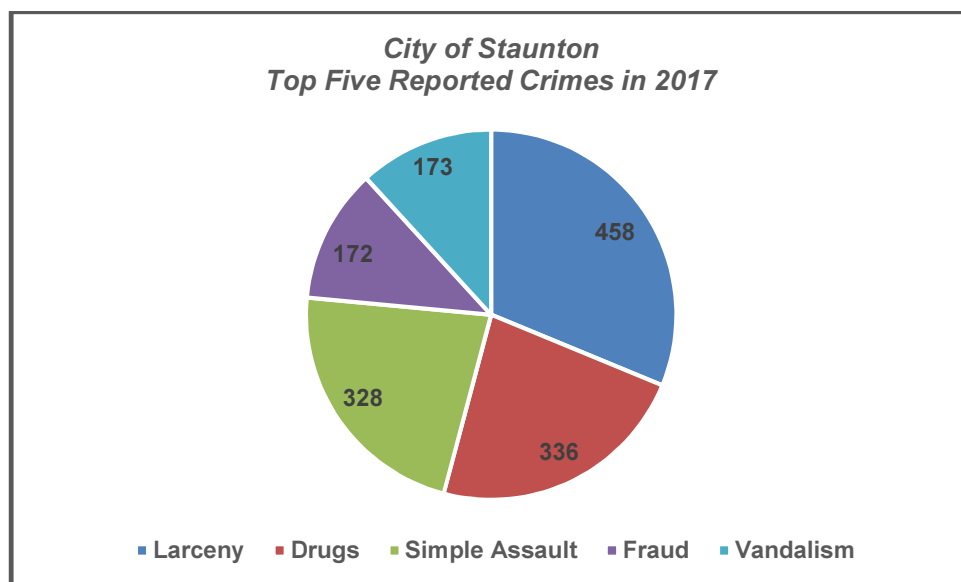


Middle River Regional Jail Needs Assessment

- Controlling for growth in the general population in the City the crime/incident rate per 100,000 population increased by 4.6% between 2014-2017, and 7.5% over the four year period ending 2017.



- The five largest categories of offenses in 2017 were Larceny (26% of the total); Drugs/Narcotics (19.1%); Simple Assault (18.6% of total offenses); Vandalism and Fraud (each with 9.8% of the total).
- Noted increases over the four-year period are noted in the offense categories of Drugs/Narcotics (57% increase, Weapon Law Violations (112%), and Fraud (34.4% increase).



Middle River Regional Jail Needs Assessment

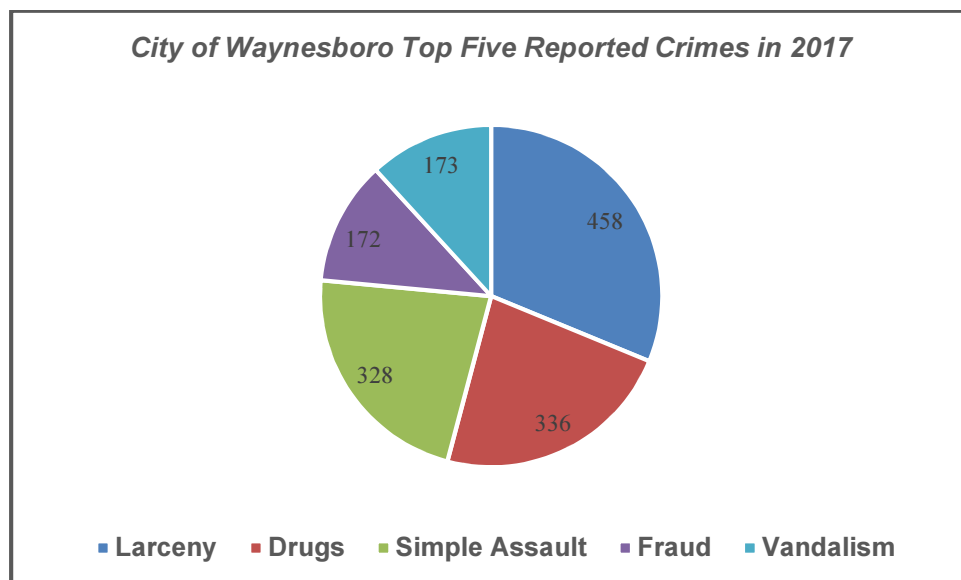
- Detailed reported crime tables follow below.

City of Staunton 2014 - 2017 Serious Crimes Reported to Law Enforcement					
	2014	2015	2016	2017	Change
Population	24,647	24,542	24,453	24,761	0.5%
Incident Rate/100,000	6,269.0	6,104	6,318	6,559	4.6%
Total Incidents	1,562	1,513	1,591	1,697	8.6%
Murder/Manslaughter	1	0	2	0	-100.0%
Kidnapping/Abduction	6	5	12	3	-50.0%
Forcible Rape	4	8	7	8	100.0%
Other Forcible Sex Offenses	28	22	24	35	25.0%
Robbery	14	10	7	9	-35.7%
Aggravated Assault	10	19	34	27	170.0%
Simple Assault	328	293	303	328	0.0%
Arson	6	5	4	13	116.7%
Extortion	1	5	1	1	--
Burglary	68	32	34	66	-2.9%
Larceny	505	447	470	458	-9.3%
Auto Theft	15	15	21	18	20.0%
Forgery	17	44	28	29	70.6%
Fraud	128	189	168	172	34.4%
Embezzlement	22	18	19	26	--
Stolen Property	12	9	14	20	66.7%
Vandalism	243	182	180	173	-28.8%
Drug/Narcotic Offenses	214	229	279	336	57.0%
Non-forcible Sex Offenses	3	2	0	0	--
Pornography	5	3	6	3	-40.0%
Gambling	0	0	0	0	--
Prostitution	0	0	1	0	--
Bribery	0	0	0	0	--
Weapon Law Violation	17	21	37	36	111.8%
Total	1,647	1,558	1,651	1,761	6.9%
Change		-89	93	110	

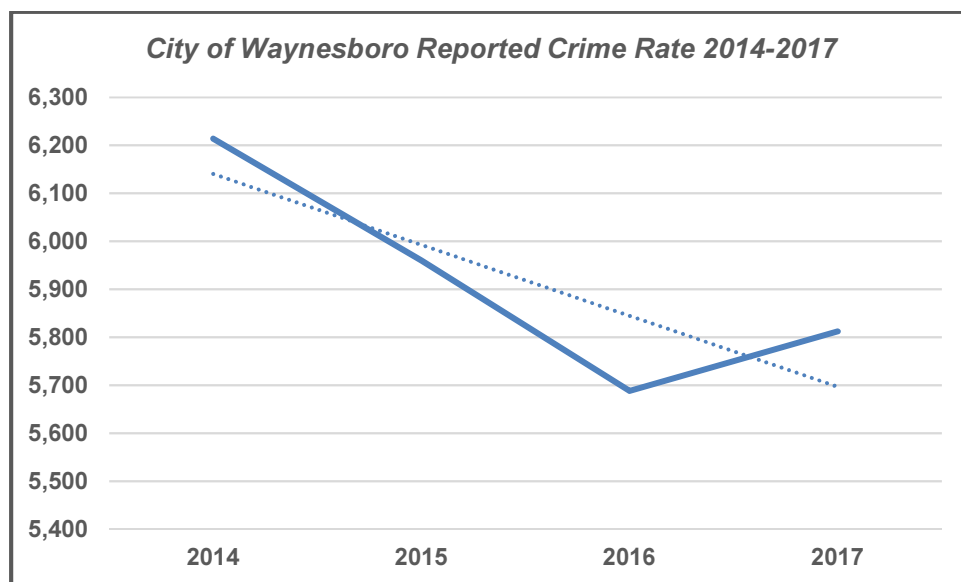
City of Staunton				
2014 - 2017 Percent of Serious Crimes Reported to Law Enforcement				
	2014	2015	2016	2017
Population	24,647	24,542	24,453	24,761
Incident Rate/100,000	6,269	6,104	6,318	6,559
Total Incidents	1,562	1,513	1,591	1,697
Murder/Manslaughter	0.1%	0.0%	0.1%	0.0%
Kidnapping/Abduction	0.4%	0.3%	0.7%	0.2%
Forcible Rape	0.2%	0.5%	0.4%	0.5%
Other Forcible Sex Offenses	1.7%	1.4%	1.5%	2.0%
Robbery	0.9%	0.6%	0.4%	0.5%
Aggravated Assault	0.6%	1.2%	2.1%	1.5%
Simple Assault	19.9%	18.8%	18.4%	18.6%
Arson	0.4%	0.3%	0.2%	0.7%
Extortion	0.1%	0.3%	0.1%	0.1%
Burglary	4.1%	2.1%	2.1%	3.7%
Larceny	30.7%	28.7%	28.5%	26.0%
Auto Theft	0.9%	1.0%	1.3%	1.0%
Forgery	1.0%	2.8%	1.7%	1.6%
Fraud	7.8%	12.1%	10.2%	9.8%
Embezzlement	1.3%	1.2%	1.2%	1.5%
Stolen Property	0.7%	0.6%	0.8%	1.1%
Vandalism	14.8%	11.7%	10.9%	9.8%
Drug/Narcotic Offenses	13.0%	14.7%	16.9%	19.1%
Non-forcible Sex Offenses	0.2%	0.1%	0.0%	0.0%
Pornography	0.3%	0.2%	0.4%	0.2%
Gambling	0.0%	0.0%	0.0%	0.0%
Prostitution	0.0%	0.0%	0.1%	0.0%
Bribery	0.0%	0.0%	0.0%	0.0%
Weapon Law Violation	1.0%	1.3%	2.2%	2.0%
Total	100.0%	100.0%	100.0%	100.0%

City of Waynesboro

- The five most often reported offenses categories reported in Waynesboro in 2017 were Larceny (30% of the total); Simple Assault (19.6%); Drugs (19.4% percent of total offenses); Vandalism (10.2%) and Fraud (7.2% of the total). These five offenses represented 86.4% of total offenses reported.



- While the total number of offenses reported to law enforcement remained fairly steady between 2014-2017, the City's crime rate per 100,000 declined from 6,214 in 2014 to 5,812 in 2017.



Middle River Regional Jail Needs Assessment

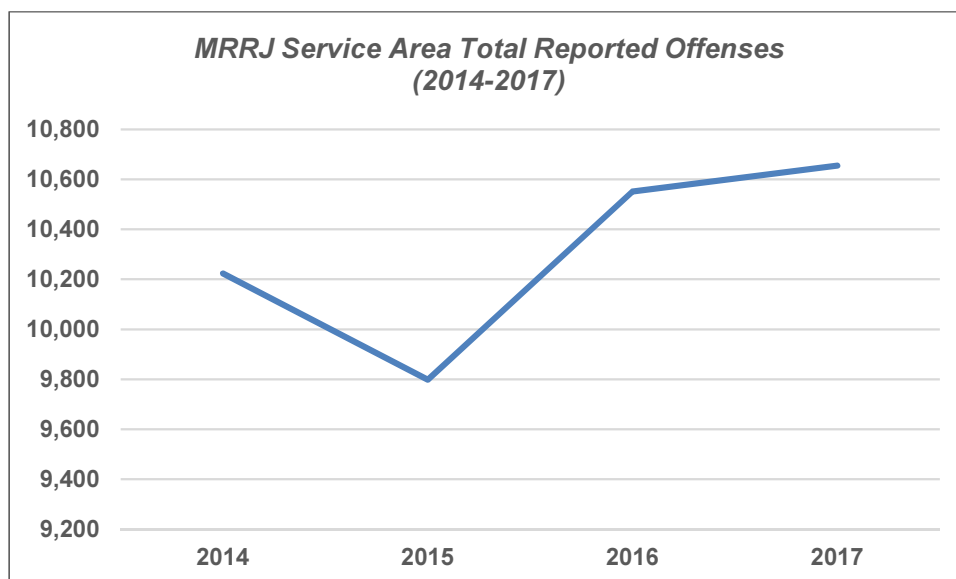
City of Waynesboro 2014 - 2017 Serious Crimes Reported to Law Enforcement					
	2014	2015	2016	2017	Change
Population	21,661	21,795	21,837	21,955	1.4%
Incident Rate/100,000	6,214.0	5,960	5,688	5,812	-6.5%
Total Incidents	1,358	1,310	1,273	1,344	-1.0%
Murder/Manslaughter	1	0	1	0	-100.0%
Kidnapping/Abduction	2	9	4	7	250.0%
Forcible Rape	6	6	12	10	66.7%
Other Forcible Sex Offenses	13	14	21	14	7.7%
Robbery	4	12	6	10	150.0%
Aggravated Assault	18	24	25	17	-5.6%
Simple Assault	220	209	276	303	37.7%
Arson	1	2	4	1	0.0%
Extortion	1	0	1	0	--
Burglary	84	29	42	46	-45.2%
Larceny	553	541	428	464	-16.1%
Auto Theft	26	14	23	23	-11.5%
Forgery	2	22	39	25	1150.0%
Fraud	98	110	120	112	14.3%
Embezzlement	19	10	16	7	--
Stolen Property	11	13	15	10	-9.1%
Vandalism	237	234	122	158	-33.3%
Drug/Narcotic Offenses	207	211	258	300	44.9%
Non-forcible Sex Offenses	1	1	2	1	--
Pornography	5	3	7	4	-20.0%
Gambling	0	0	0	0	--
Prostitution	0	0	0	0	--
Bribery	0	0	0	0	--
Weapon Law Violation	29	34	25	36	24.1%
Total	1,538	1,498	1,447	1,548	0.7%
Change		-40	-51	101	

Middle River Regional Jail Needs Assessment

City of Waynesboro 2014 - 2017 Percent of Serious Crimes Reported to Law Enforcement				
	2014	2015	2016	2017
Population	21,661	21,795	21,837	21,955
Incident Rate/100,000	6,214	5,960	5,688	5,812
Total Incidents	1,358	1,310	1,273	1,344
Murder/Manslaughter	0.1%	0.0%	0.1%	0.0%
Kidnapping/Abduction	0.1%	0.6%	0.3%	0.5%
Forcible Rape	0.4%	0.4%	0.8%	0.6%
Other Forcible Sex Offenses	0.8%	0.9%	1.5%	0.9%
Robbery	0.3%	0.8%	0.4%	0.6%
Aggravated Assault	1.2%	1.6%	1.7%	1.1%
Simple Assault	14.3%	14.0%	19.1%	19.6%
Arson	0.1%	0.1%	0.3%	0.1%
Extortion	0.1%	0.0%	0.1%	0.0%
Burglary	5.5%	1.9%	2.9%	3.0%
Larceny	36.0%	36.1%	29.6%	30.0%
Auto Theft	1.7%	0.9%	1.6%	1.5%
Forgery	0.1%	1.5%	2.7%	1.6%
Fraud	6.4%	7.3%	8.3%	7.2%
Embezzlement	1.2%	0.7%	1.1%	0.5%
Stolen Property	0.7%	0.9%	1.0%	0.6%
Vandalism	15.4%	15.6%	8.4%	10.2%
Drug/Narcotic Offenses	13.5%	14.1%	17.8%	19.4%
Non-forcible Sex Offenses	0.1%	0.1%	0.1%	0.1%
Pornography	0.3%	0.2%	0.5%	0.3%
Gambling	0.0%	0.0%	0.0%	0.0%
Prostitution	0.0%	0.0%	0.0%	0.0%
Bribery	0.0%	0.0%	0.0%	0.0%
Weapon Law Violation	1.9%	2.3%	1.7%	2.3%
Total	100.0%	100.0%	100.0%	100.0%

Middle River Regional Jail Service Area

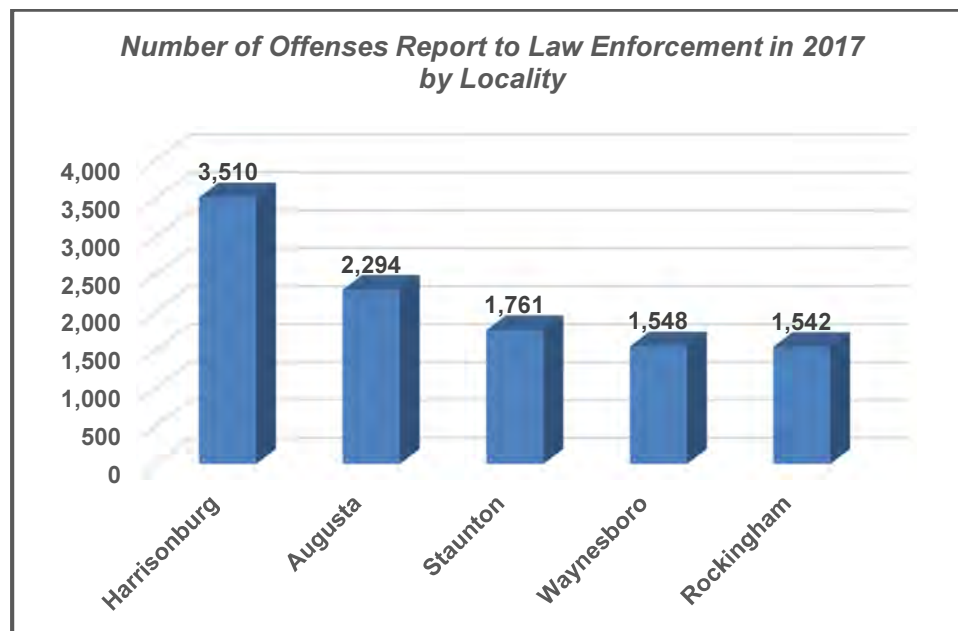
- As seen in the table that follows in this section of the report, reported crime in the jail Service Area (the combined localities) increased from 10,224 in 2014, to 10,655 in 2017 – a total increase of 4.2% over the four - year period.
- In 2017, there were just under 900 crimes reported to law enforcement each month; on average just under 30 criminal offenses per day.
- There were 431 more crimes reported in 2017 than were reported 2014.
- While the combined general population in the Service Area grew by just under two percent between 2014-2017, the number of reported offenses increased by 4.2% over the same period.



- Noteworthy increases in the combined localities are reported for the offenses of Embezzlement (Other Forcible Sex Offenses +75.9%, N=153); Auto Theft (+60.8%, N=209); Drug/Narcotics (+31%, N=2,295); and Weapon Law Violations (+ 39.7%, N= 250).

Middle River Regional Jail Needs Assessment

MRRJ Service Area 2014 - 2017 Serious Crimes Reported to Law Enforcement					
	2014	2015	2016	2017	Change
Population	233,218	234,804	235,604	237,278	1.7%
Incident Rate/100,000	--	--	--	--	--
Total Incidents	8,853	8,641	9,244	9,452	6.8%
Murder/Manslaughter	9	5	10	5	-44.4%
Kidnapping/Abduction	32	39	46	45	40.6%
Forcible Rape	49	47	63	63	28.6%
Other Forcible Sex Offenses	87	99	134	153	75.9%
Robbery	43	43	50	37	-14.0%
Aggravated Assault	225	221	221	222	-1.3%
Simple Assault	1,418	1,415	1,815	1,716	21.0%
Arson	21	13	24	28	33.3%
Extortion	4	8	2	8	--
Burglary	683	475	555	536	-21.5%
Larceny	2,865	2,866	2,542	2,551	-11.0%
Auto Theft	130	132	162	209	60.8%
Forgery	156	216	193	214	37.2%
Fraud	845	813	820	939	11.1%
Embezzlement	91	87	84	89	--
Stolen Property	48	61	63	55	14.6%
Vandalism	1,528	1,263	1,209	1,183	-22.6%
Drug/Narcotic Offenses	1,752	1,710	2,249	2,295	31.0%
Non-forcible Sex Offenses	12	3	9	3	--
Pornography	42	39	49	51	21.4%
Gambling	0	0	0	0	--
Prostitution	5	37	18	3	--
Bribery	0	0	0	0	--
Weapon Law Violation	179	206	234	250	39.7%
Total	10,224	9,798	10,552	10,655	4.2%
Change		-426	754	103	



MRRJ Service Area Total Crime Reported in 2017		
Locality	Number	Percent
Harrisonburg	3,510	32.9%
Augusta	2,294	21.5%
Staunton	1,761	16.5%
Waynesboro	1,548	14.5%
Rockingham	1,542	14.5%
Total Crime	10,655	100.0%

- Approximately 33% of reported crime in the Service Area is reported by the City of Harrisonburg; Rockingham and Harrisonburg combined reported just under half of the total.

MRRJ Service Area 2014 - 2017 Percent of Serious Crimes Reported to Law Enforcement				
	2014	2015	2016	2017
Population	233,218	234,804	235,604	237,278
Incident Rate/100,000	--	--	--	--
Total Incidents	8,853	8,641	9,244	9,452
Murder/Manslaughter	0.1%	0.1%	0.1%	0.0%
Kidnapping/Abduction	0.3%	0.4%	0.4%	0.4%
Forcible Rape	0.5%	0.5%	0.6%	0.6%
Other Forcible Sex Offenses	0.9%	1.0%	1.3%	1.4%
Robbery	0.4%	0.4%	0.5%	0.3%
Aggravated Assault	2.2%	2.3%	2.1%	2.1%
Simple Assault	13.9%	14.4%	17.2%	16.1%
Arson	0.2%	0.1%	0.2%	0.3%
Extortion	0.0%	0.1%	0.0%	0.1%
Burglary	6.7%	4.8%	5.3%	5.0%
Larceny	28.0%	29.3%	24.1%	23.9%
Auto Theft	1.3%	1.3%	1.5%	2.0%
Forgery	1.5%	2.2%	1.8%	2.0%
Fraud	8.3%	8.3%	7.8%	8.8%
Embezzlement	0.9%	0.9%	0.8%	0.8%
Stolen Property	0.5%	0.6%	0.6%	0.5%
Vandalism	14.9%	12.9%	11.5%	11.1%
Drug/Narcotic Offenses	17.1%	17.5%	21.3%	21.5%
Non-forcible Sex Offenses	0.1%	0.0%	0.1%	0.0%
Pornography	0.4%	0.4%	0.5%	0.5%
Gambling	0.0%	0.0%	0.0%	0.0%
Prostitution	0.0%	0.4%	0.2%	0.0%
Bribery	0.0%	0.0%	0.0%	0.0%
Weapon Law Violation	1.8%	2.1%	2.2%	2.3%
Total	100.0%	100.0%	100.0%	100.0%

Law Enforcement Personnel Trends

The number of law enforcement personnel in a locality has been shown to be related to arrest volume; arrest volume generally (although not always) is associated with jail intake volume. In general arrest volume organically varies with the number of officers available to make arrests.

- In the reporting localities the number of law enforcement personnel in the community has not increased significantly.
- Statewide, the number of law enforcement personnel have increased by approximately 3% for the past several years. The number of sworn officers in each locality increased from 322 in 2014, to 334 in 2018 – an increase of 12 officers and 3.7% growth.

MRRJ Service Area Changes in Law Enforcement Resources (2014 - 2018)							
						Change	
Jurisdiction	2014	2015	2016	2017	2018	Number	Percent
Augusta County	80	68	71	66	72	-8	-10.0%
Rockingham Sheriff's Office	58	60	62	62	64	6	10.3%
Harrisonburg PD	94	92	95	99	101	7	7.4%
Staunton PD	48	48	46	49	50	2	4.2%
Waynesboro PD	42	42	42	42	47	5	11.9%
Total	322	310	316	318	334	12	3.7%

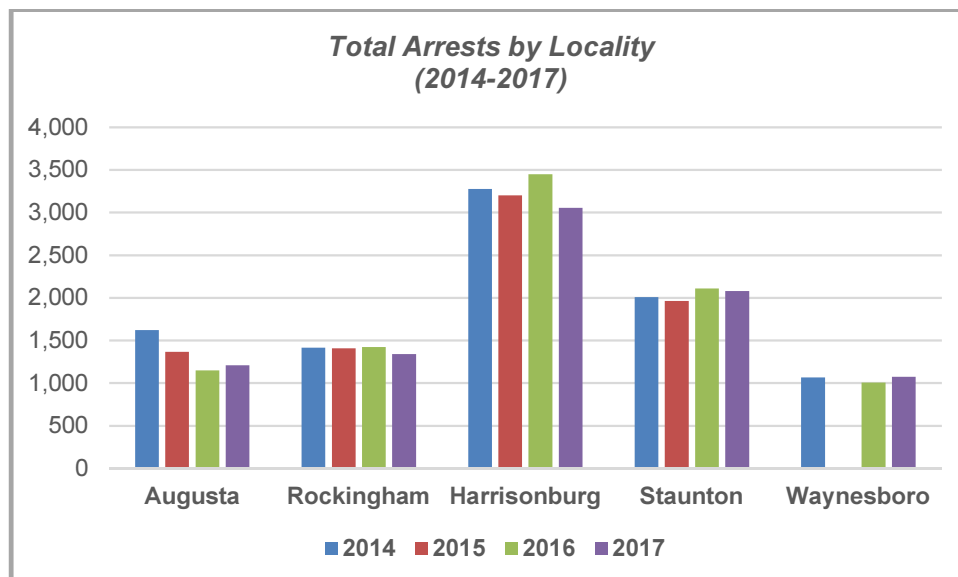
Note not included are local PDs in Rockingham County and James Madison PD in Harrisonburg.

Section B - Arrest Data

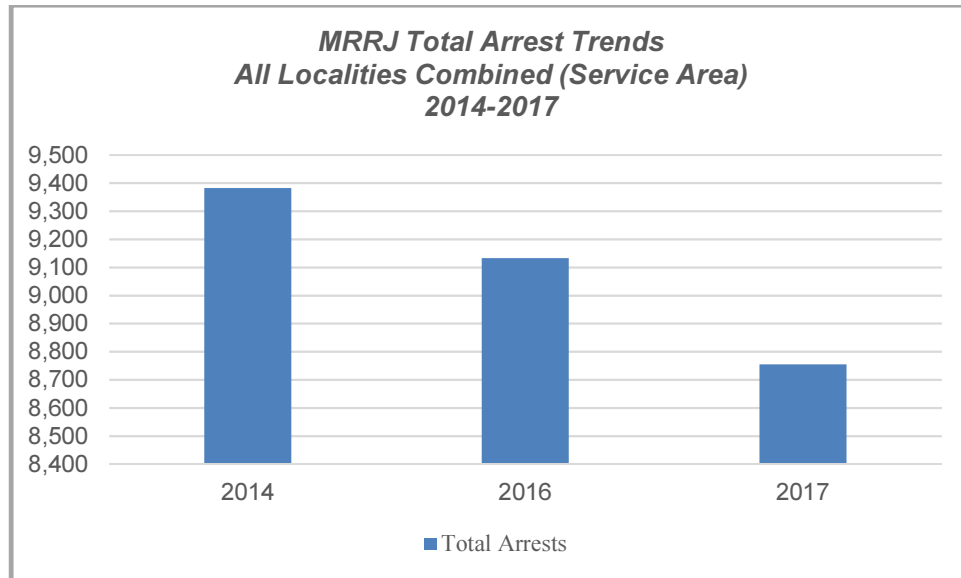
Arrest data for calendar years 2014 through 2017 were obtained from the *Crime in Virginia* reports issued by the Virginia State Police. The individual arrests, by locality and the combined Service Area are reported by group (category) and summarized by Group A and Group B categories in the tables and exhibits that follow.

Middle River Regional Jail Service Area

- A total of 35,204 adult arrests were made by law enforcement in the member localities over the five-year period ending 2017 – an average of approximately 8,800 per year and 183 arrests each month.
- Overall, in the combined Service Area, adult arrests reported in 2014 were 6.7% higher the number reported in 2017; there were 9,382 adult arrests in 2014, and 8,755 arrests in 2017.
- Over the last five years the most frequently occurring specific reported arrest offense categories have been: (1) “All Other” (38.5% of the total); (2) Drug and Narcotics (12.4% of the total), (3) Drunkenness (10.7% of the total), (4) Larceny (8.3%) and (5) Simple Assault (7.3% of the total).



Middle River Regional Jail Needs Assessment



The number of arrests and the percent of the total represented by each crime type for MRRJ Service Area are presented in the two tables that follow.

Middle River Regional Jail Service Area Adult Arrests by Selected Category (2014-2017)							
Offense Category	2014	2015	2016	2017	TOTAL	Number Change	Percent Change
Violent	196	174	234	227	831	31	15.8%
Simple Assault	616	566	678	693	2,553	77	12.5%
Weapon Law Violations	65	64	77	84	290	19	29.2%
Burglary	117	61	121	105	404	-12	-10.3%
Larceny	863	790	738	546	2,937	-317	-36.7%
Vandalism	73	109	93	76	351	3	4.1%
Drug/Narcotic Offenses	903	844	1307	1308	4,362	405	44.9%
Alcohol	1,891	1,455	1,464	1,317	6,127	-574	-30.4%
Total	4,724	4,063	4,712	4,356	17,855	-368	-7.8%

- Arrests for the most serious offenses involving crimes against persons (murder, manslaughter, forcible rape, robbery and aggravated assault) increased by 15.8% over the last five years.
- Arrests for Drug/Narcotic Offenses, Weapons Law Violations, Simple Assault and Vandalism offenses all increased between 2014 – 2017.
- Over the five-year period ending 2017, arrests for Alcohol offenses, Larceny and Burglary all declined.

Middle River Regional Jail Needs Assessment

- The percentage of arrests by major category for the four-year study period are depicted in the table that follows. The “all other offenses” arrest category, which accounts for about a third of all arrests in Rockingham and Harrisonburg combined, is the single largest category. This category generally includes less serious offenses such as (but not limited to) abduction, bigamy, blackmail, contempt of court, probation/parole violations, perjury, possession of burglary tools and trespassing.

<i>Middle River Regional Jail Service Area Adult Arrests by Selected Category (2014-2017)</i>					
<i>Offense Category</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>TOTAL</i>
Violent	4.1%	4.3%	5.0%	5.2%	4.7%
Simple Assault	13.0%	13.9%	14.4%	15.9%	14.3%
Weapon Law Violations	1.4%	1.6%	1.6%	1.9%	1.6%
Burglary	2.5%	1.5%	2.6%	2.4%	2.3%
Larceny	18.3%	19.4%	15.7%	12.5%	16.4%
Vandalism	1.5%	2.7%	2.0%	1.7%	2.0%
Drug/Narcotic Offenses	19.1%	20.8%	27.7%	30.0%	24.4%
Alcohol	40.0%	35.8%	31.1%	30.2%	34.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

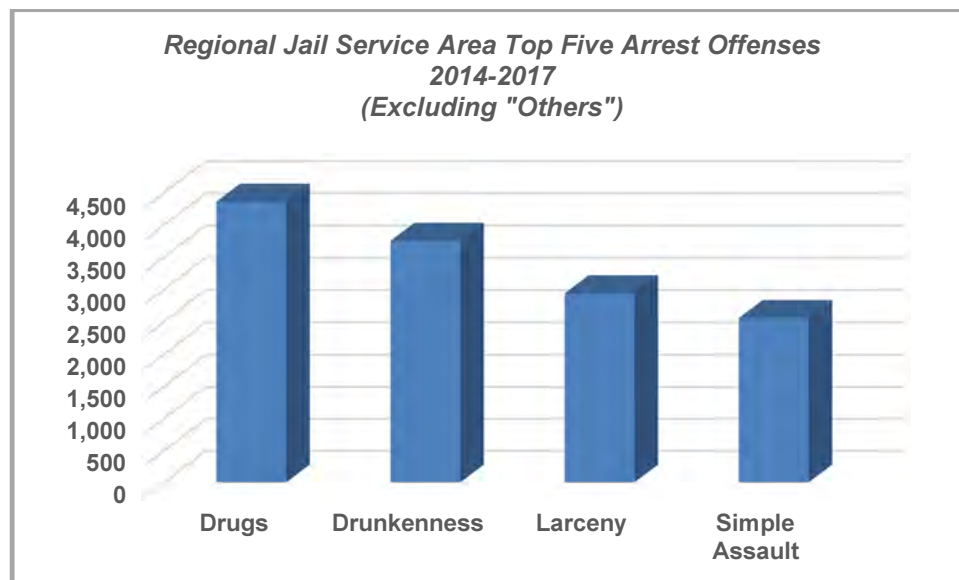
- Detailed annual arrest data for the combined Service Area is presented in the tables that follow.

Middle River Regional Jail Needs Assessment

MRRJ Service Area: 2014 - 2017 Adult Arrests by Offense					
Offense	2014	2015	2016	2017	Total
Murder/Manslaughter	11	4	11	7	33
Kidnapping/Abduction	20	20	36	28	104
Sex Offenses, Forcible	50	41	37	43	171
Robbery	16	20	19	24	79
Aggravated Assault	99	89	131	125	444
Simple Assault/Intimidation	616	566	678	693	2,553
Arson	7	4	5	2	18
Extortion/Blackmail	0	1	1	3	5
Burglary	117	61	121	105	404
Larceny	863	790	738	546	2,937
Motor Vehicle Theft	11	16	17	23	67
Counterfeiting/Forgery	51	56	63	94	264
Fraud	151	133	197	218	699
Embezzlement	31	33	43	44	151
Stolen Property	42	38	35	32	147
Vandalism	73	109	93	76	351
Drug/Narcotic Offenses	903	844	1,307	1,308	4,362
Sex Offenses, Nonforcible	6	1	1	3	11
Pornography	12	7	7	19	45
Gambling	0	0	0	0	0
Prostitution	2	27	11	3	43
Bribery	0	0	0	0	0
Weapon Law Violations	65	64	77	84	290
TOTAL GROUP A	3,146	2,924	3,628	3,480	13,178
Bad Checks	70	60	68	12	210
Curfew/Loitering/Vagrancy	0	0	0	0	0
Disorderly Conduct	65	41	50	71	227
Driving Under the Influence	716	564	601	492	2,373
Drunkenness	1,175	891	863	825	3,754
Family Offenses, Nonforcible	72	43	62	53	230
Liquor Law Violations	317	153	251	182	903
Peeping Tom	0	1	0	2	3
Runaway	0	0	0	0	0
Trespass of Real Property	184	149	141	180	654
Conspiracy	7	7	54	43	111
All Other (except Traffic)	3,630	3,101	3,415	3,415	13,561
TOTAL GROUP B	6,236	5,010	5,505	5,275	22,026
Grand Total	9,382	7,934	9,133	8,755	35,204

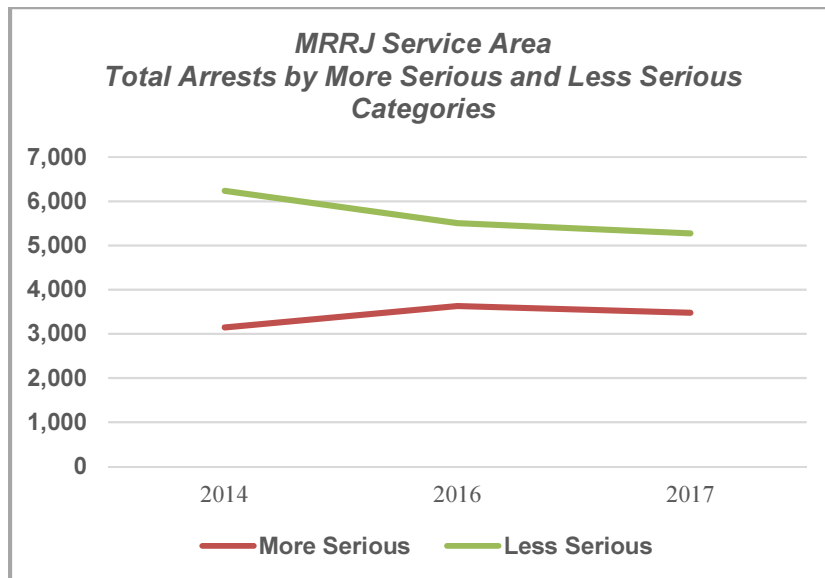
The following graph displays the top five most prevalent arrest categories in the Service Area in 2013.

Middle River Regional Jail Needs Assessment



The table below displays a comparison in the arrest trends reported for each member of the Authority. While there has been a decline in total arrests collectively between 2014-2017, the City of Staunton showed a modest increase in arrests.

Middle River Regional Jail Four Year Arrest Trends by Locality										
	Augusta		Harrisonburg		Rockingham		Staunton		Waynesboro	
Year	Number	Change	Number	Change	Number	Change	Number	Change	Number	Change
2014	1,622	--	3,275	--	1,414	--	2,006	--	1,065	--
2015	1,365	-15.8%	3,200	-2.3%	1,407	-0.5%	1,962	-2.2%	--	--
2016	1,149	-15.8%	3,447	7.7%	1,421	1.0%	2,109	7.5%	1,007	--
2017	1,209	5.2%	3,054	-11.4%	1,339	-5.8%	2,080	-1.4%	1,073	6.6%
Total Change	-413	-26.4%	-221	-6.0%	-75	-5.3%	74	3.9%	8	--

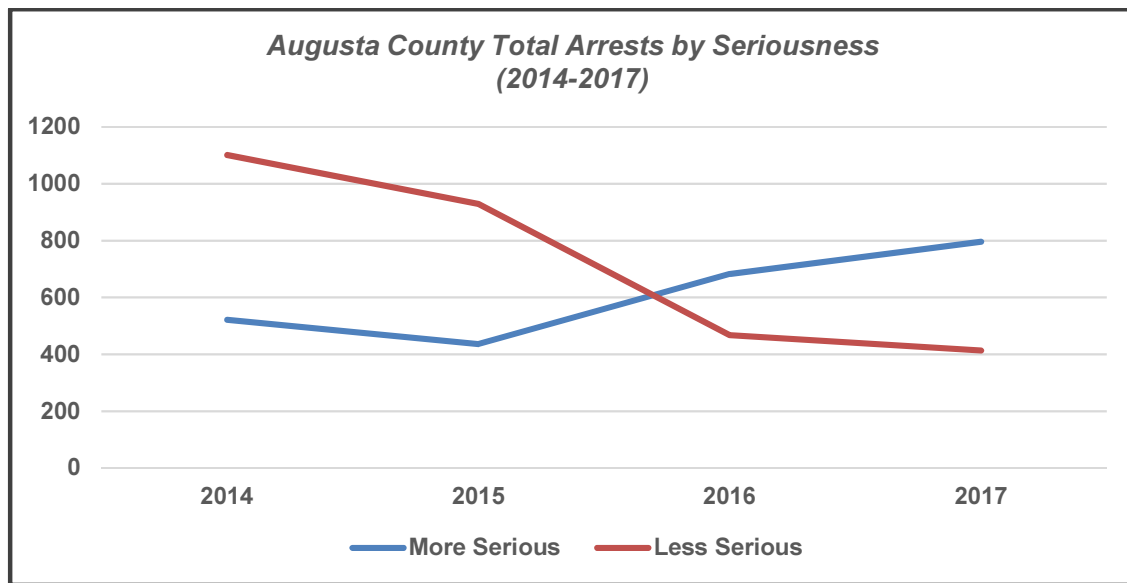
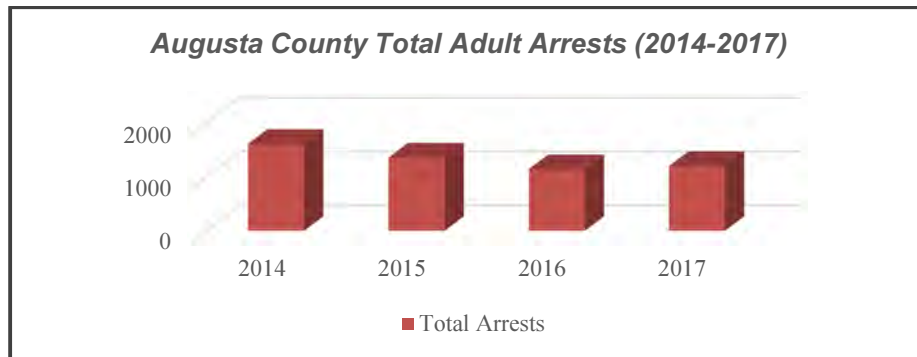


- The tables that follow display summary adult arrest data trends for each locality separately.

Middle River Regional Jail Needs Assessment

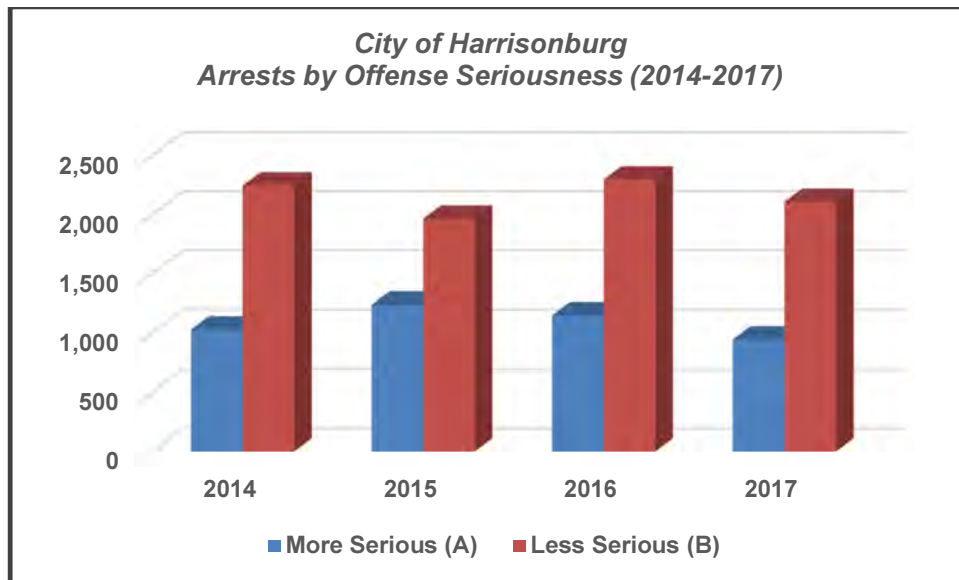
Augusta County

Augusta County: 2014 - 2017 Adult Arrests by Offense					
Offense	2014	2015	2016	2017	Total
Murder/Manslaughter	6	4	6	1	17
Kidnapping/Abduction	8	12	14	11	45
Sex Offenses, Forcible	22	16	12	9	59
Robbery	4	5	3	2	14
Aggravated Assault	31	19	37	41	128
Simple Assault/Intimidation	83	83	122	152	440
Arson	1	0	2	0	3
Extortion/Blackmail	0	0	0	1	1
Burglary	31	25	46	37	139
Larceny	93	74	85	109	361
Motor Vehicle Theft	7	1	5	11	24
Counterfeiting/Forgery	9	6	10	15	40
Fraud	22	18	21	42	103
Embezzlement	2	4	7	6	19
Stolen Property	10	4	8	14	36
Vandalism	10	29	8	16	63
Drug/Narcotic Offenses	165	119	278	300	862
Sex Offenses, Nonforcible	2	0	0	2	4
Pornography	0	1	2	1	4
Gambling	0	0	0	0	0
Prostitution	0	0	0	0	0
Bribery	0	0	0	0	0
Weapon Law Violations	15	16	16	26	73
TOTAL GROUP A	521	436	682	796	2,435
Bad Checks	8	10	6	2	26
Curfew/Loitering/Vagrancy	0	0	0	0	0
Disorderly Conduct	6	9	8	15	38
Driving Under the Influence	147	147	128	111	533
Drunkenness	152	104	91	94	441
Family Offenses, Nonforcible	8	4	7	3	22
Liquor Law Violations	14	4	4	6	28
Peeping Tom	0	0	0	0	0
Runaway	0	0	0	0	0
Trespass of Real Property	39	32	8	17	96
Conspiracy	0	0	0	0	0
All Other (except Traffic)	727	619	215	165	1,726
TOTAL GROUP B	1,101	929	467	413	2,910
Grand Total	1,622	1,365	1,149	1,209	5,345
Change Group A	275				
Change Group B	-688				



Middle River Regional Jail Needs Assessment

Harrisonburg City

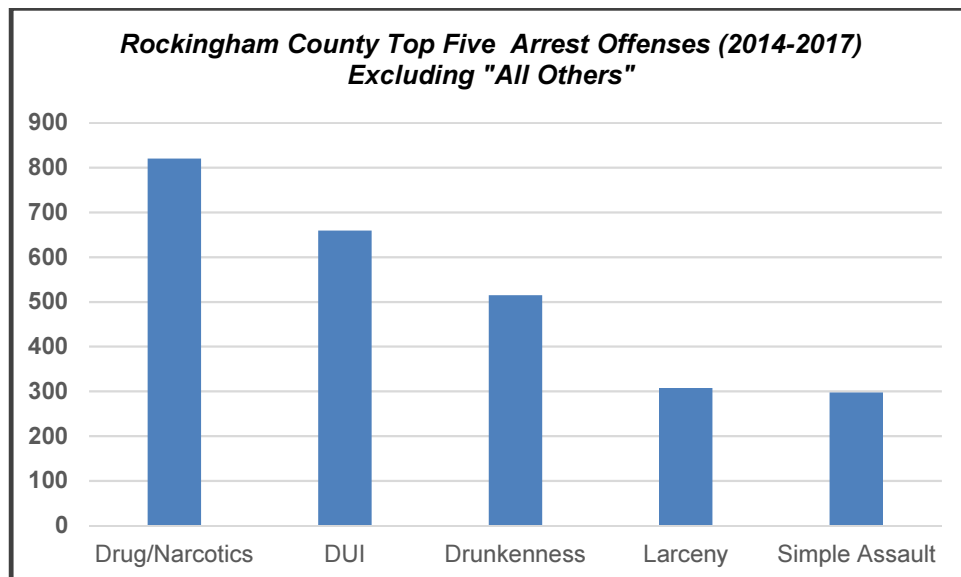
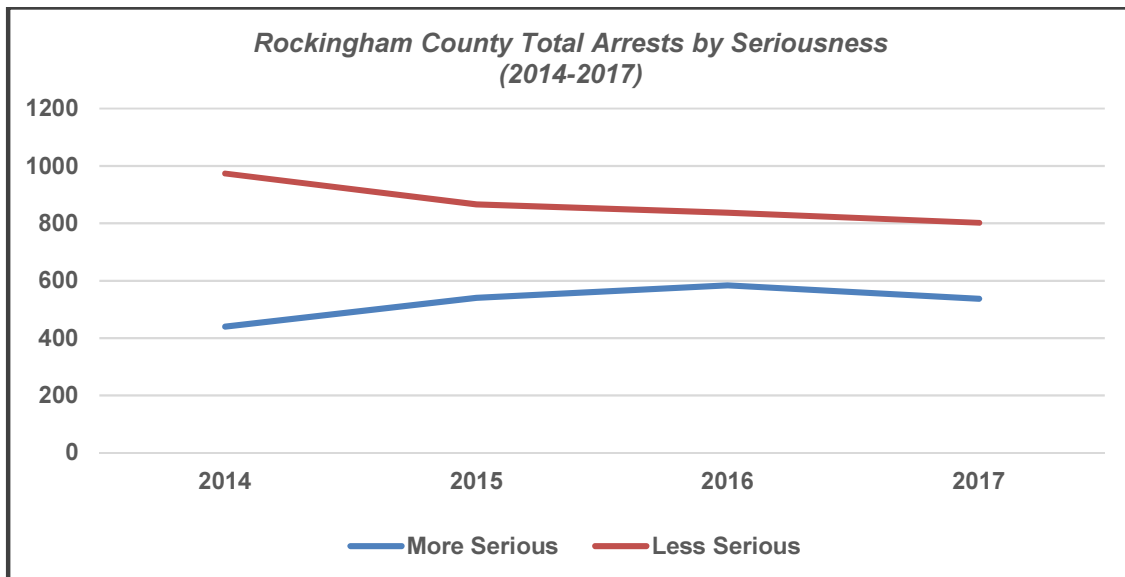


Middle River Regional Jail Needs Assessment

City of Harrisonburg: 2014 - 2017 Adult Arrests by Offense					
Offense	2014	2015	2016	2017	Total
Murder/Manslaughter	1	0	3	3	7
Kidnapping/Abduction	7	5	8	7	27
Sex Offenses, Forcible	5	6	5	8	24
Robbery	2	4	10	9	25
Aggravated Assault	34	37	32	33	136
Simple Assault/Intimidation	222	227	255	200	904
Arson	0	2	2	1	5
Extortion/Blackmail	0	0	0	1	1
Burglary	28	18	32	25	103
Larceny	286	407	221	129	1,043
Motor Vehicle Theft	0	3	5	4	12
Counterfeiting/Forgery	16	32	27	25	100
Fraud	41	63	55	45	204
Embezzlement	13	12	15	8	48
Stolen Property	6	9	5	4	24
Vandalism	23	34	36	16	109
Drug/Narcotic Offenses	322	334	406	411	1,473
Sex Offenses, Nonforcible	1	0	0	0	1
Pornography	5	1	2	8	16
Gambling	0	0	0	0	0
Prostitution	2	21	9	1	33
Bribery	0	0	0	0	0
Weapon Law Violations	17	22	23	9	71
TOTAL GROUP A	1,031	1,237	1,151	947	4,366
Bad Checks	20	18	31	3	72
Curfew/Loitering/Vagrancy	0	0	0	0	0
Disorderly Conduct	30	17	23	28	98
Driving Under the Influence	176	185	167	145	673
Drunkenness	562	440	407	414	1,823
Family Offenses, Nonforcible	8	4	13	5	30
Liquor Law Violations	247	120	232	159	758
Peeping Tom	0	0	0	0	0
Runaway	0	0	0	0	0
Trespass of Real Property	55	42	57	68	222
Conspiracy	1	3	46	29	79
All Other (except Traffic)	1,145	1,134	1,320	1,256	4,855
TOTAL GROUP B	2,244	1,963	2,296	2,107	8,610
Grand Total	3,275	3,200	3,447	3,054	12,976
Change Group A	-84				
Change Group B	-137				

Middle River Regional Jail Needs Assessment

Rockingham County

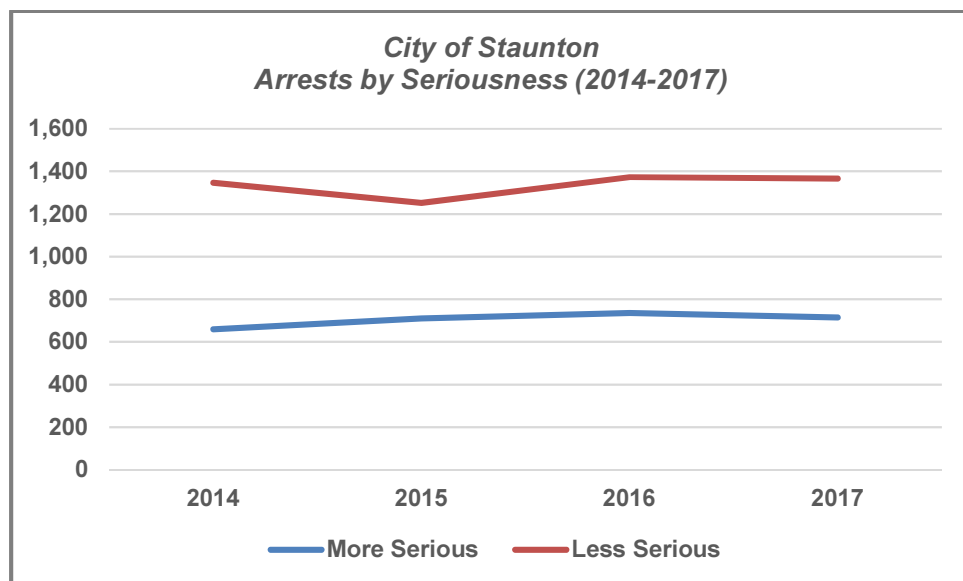
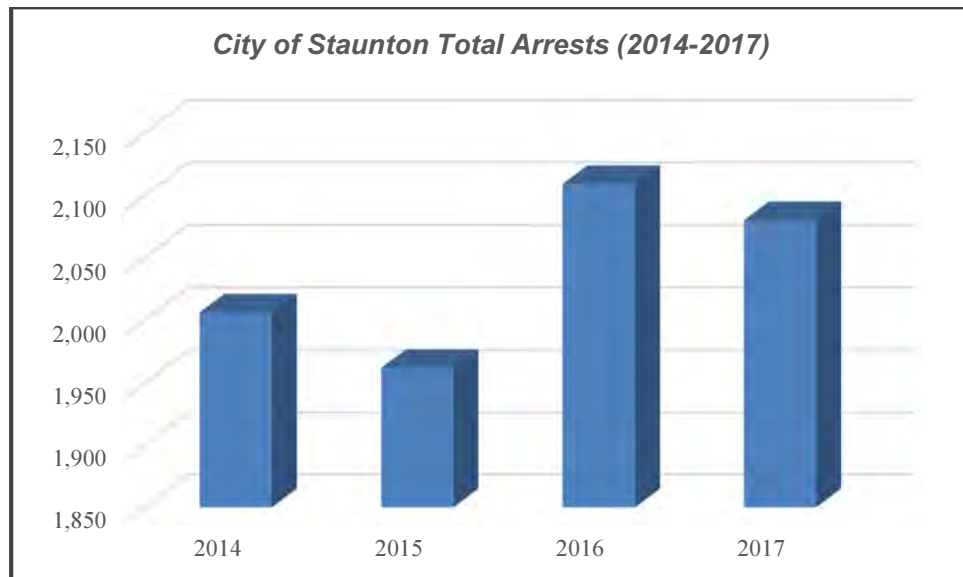


Middle River Regional Jail Needs Assessment

Rockingham County: 2014 - 2017 Adult Arrests by Offense					
Offense	2014	2015	2016	2017	Total
Murder/Manslaughter	3	0	0	2	5
Kidnapping/Abduction	0	1	3	2	6
Sex Offenses, Forcible	6	8	6	7	27
Robbery	3	1	3	0	7
Aggravated Assault	12	12	25	17	66
Simple Assault/Intimidation	64	94	65	74	297
Arson	5	1	1	0	7
Extortion/Blackmail	0	0	0	0	0
Burglary	32	8	27	19	86
Larceny	74	97	88	48	307
Motor Vehicle Theft	3	12	2	4	21
Counterfeiting/Forgery	16	4	7	17	44
Fraud	29	22	50	40	141
Embezzlement	4	9	10	12	35
Stolen Property	9	24	14	3	50
Vandalism	20	20	24	24	88
Drug/Narcotic Offenses	139	202	240	239	820
Sex Offenses, Nonforcible	1	0	0	0	1
Pornography	1	3	2	5	11
Gambling	0	0	0	0	0
Prostitution	0	6	2	0	8
Bribery	0	0	0	0	0
Weapon Law Violations	19	17	15	24	75
TOTAL GROUP A	440	541	584	537	2,102
Bad Checks	37	28	21	3	89
Curfew/Loitering/Vagrancy	0	0	0	0	0
Disorderly Conduct	10	4	8	8	30
Driving Under the Influence	181	163	181	134	659
Drunkenness	143	152	119	101	515
Family Offenses, Nonforcible	39	32	35	35	141
Liquor Law Violations	45	15	9	7	76
Peeping Tom	0	0	0	1	1
Runaway	0	0	0	0	0
Trespass of Real Property	37	37	27	27	128
Conspiracy	5	4	8	13	30
All Other (except Traffic)	477	431	429	473	1,810
TOTAL GROUP B	974	866	837	802	3,479
Grand Total	1,414	1,407	1,421	1,339	5,581

Middle River Regional Jail Needs Assessment

City of Staunton

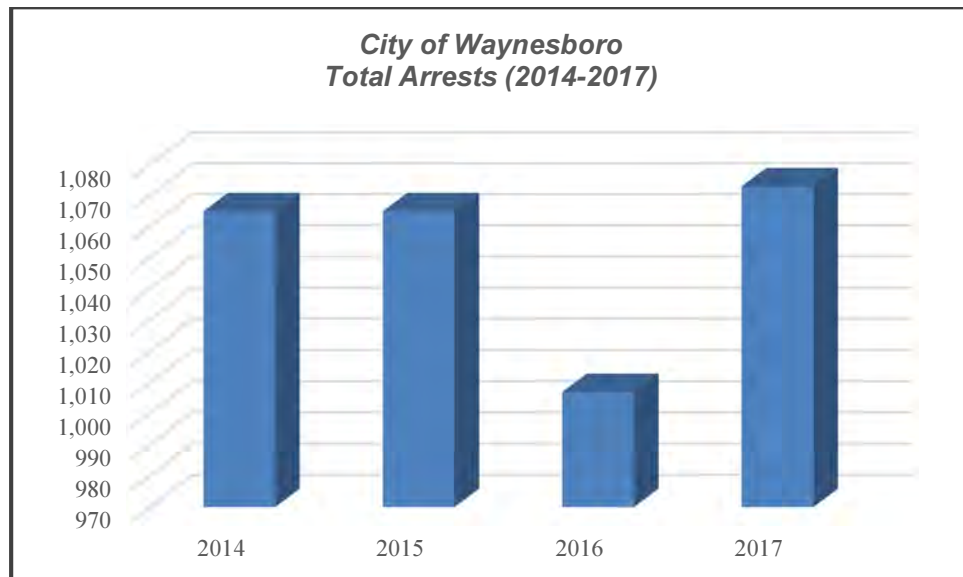


Middle River Regional Jail Needs Assessment

City of Staunton: 2014 - 2017 Adult Arrests by Offense					
Offense	2014	2015	2016	2017	Total
Murder/Manslaughter	0	0	2	0	2
Kidnapping/Abduction	3	2	7	3	15
Sex Offenses, Forcible	11	11	7	13	42
Robbery	6	10	1	5	22
Aggravated Assault	10	21	28	18	77
Simple Assault/Intimidation	185	162	177	173	697
Arson	0	1	0	1	2
Extortion/Blackmail	0	1	1	1	3
Burglary	15	10	11	17	53
Larceny	200	212	198	155	765
Motor Vehicle Theft	0	0	0	0	0
Counterfeiting/Forgery	3	14	9	18	44
Fraud	29	30	49	54	162
Embezzlement	6	8	9	10	33
Stolen Property	0	1	4	3	8
Vandalism	9	26	17	17	69
Drug/Narcotic Offenses	167	189	202	208	766
Sex Offenses, Nonforcible	2	1	0	0	3
Pornography	5	2	0	3	10
Gambling	0	0	0	0	0
Prostitution	0	0	0	2	2
Bribery	0	0	0	0	0
Weapon Law Violations	8	9	14	13	44
TOTAL GROUP A	659	710	736	714	2,819
Bad Checks	4	4	6	4	18
Curfew/Loitering/Vagrancy	0	0	0	0	0
Disorderly Conduct	15	11	4	16	46
Driving Under the Influence	116	69	88	57	330
Drunkenness	209	195	181	128	713
Family Offenses, Nonforcible	2	3	0	5	10
Liquor Law Violations	8	14	5	9	36
Peeping Tom	0	1	0	0	1
Runaway	0	0	0	0	0
Trespass of Real Property	37	38	37	58	170
Conspiracy	1	0	0	1	2
All Other (except Traffic)	955	917	1,052	1,088	4,012
TOTAL GROUP B	1,347	1,252	1,373	1,366	5,338
Grand Total	2,006	1,962	2,109	2,080	8,157

Middle River Regional Jail Needs Assessment

City of Waynesboro



Middle River Regional Jail Needs Assessment

City of Waynesboro: 2014 - 2017 Adult Arrests by Offense					
Offense	2014	2015	2016	2017	Total
Murder/Manslaughter	1	--	0	1	2
Kidnapping/Abduction	2	--	4	5	11
Sex Offenses, Forcible	6	--	7	6	19
Robbery	1	--	2	8	11
Aggravated Assault	12	--	9	16	37
Simple Assault/Intimidation	62	--	59	94	215
Arson	1	--	0	0	1
Extortion/Blackmail	0	--	0	0	0
Burglary	11	--	5	7	23
Larceny	210	--	146	105	461
Motor Vehicle Theft	1	--	5	4	10
Counterfeiting/Forgery	7	--	10	19	36
Fraud	30	--	22	37	89
Embezzlement	6	--	2	8	16
Stolen Property	17	--	4	8	29
Vandalism	11	--	8	3	22
Drug/Narcotic Offenses	110	--	181	150	441
Sex Offenses, Nonforcible	0	--	1	1	2
Pornography	1	--	1	2	4
Gambling	0	--	0	0	0
Prostitution	0	--	0	0	0
Bribery	0	--	0	0	0
Weapon Law Violations	6	--	9	12	27
TOTAL GROUP A	495	--	475	486	1,456
Bad Checks	1	--	4	0	5
Curfew/Loitering/Vagrancy	0	--	0	0	0
Disorderly Conduct	4	--	7	4	15
Driving Under the Influence	96	--	37	45	178
Drunkenness	109	--	65	88	262
Family Offenses, Nonforcible	15	--	7	5	27
Liquor Law Violations	3	--	1	1	5
Peeping Tom	0	--	0	1	1
Runaway	0	--	0	0	0
Trespass of Real Property	16	--	12	10	38
Conspiracy	0	--	0	0	0
All Other (except Traffic)	326	--	399	433	1,158
TOTAL GROUP B	570	--	532	587	1,689
Grand Total	1,065	--	1,007	1,073	3,145

Section IV

Existing Jail Facility

General Description of the Facility

The Middle River Regional Jail, located on 28 acres in Staunton, Virginia, was constructed in 2005-2006. Opened in 2006, the Jail incarcerates adult male and female detainees under the direction of the Middle River Authority Board representing the cities of Harrisonburg, Staunton and Waynesboro, and the counties of Augusta and Rockingham. The facility is approximately 212,000 square feet; functions as the only jail for the localities of Staunton, Augusta and Waynesboro, and services as a second jail for Rockingham and Harrisonburg.

MRRJ was built to alleviate the need for additional space due to the increasing jail population at the Augusta County Jail, formerly located in downtown Staunton, VA. MRRJ enabled inmates that were formerly being held in other facilities due to overcrowding to return back to their local jurisdiction. The facility was designed to house 396 detainees but has operated for many years with a daily population in excess of 800 inmates which is accomplished through double and triple “bunking”.

Operating Capacity

The facility opened in 2006 and has a rated capacity of 396, as established by the Department of Corrections. In the Fall of 2019, the facility was operating with a contingent of approximately 150 jail officers and civilian personnel.

- There currently are 27 housing units, consisting of 8 dormitory units and 19 cell blocks.

MMRJ Existing Layout According to Original Design (Rated Capacity)								
	Cell			Dorm		Total		
	Male	Female	Both	Male	Female	Male	Female	Both
Units/Blocks	12	5	2	6	2	18	7	2
Rated	216	48	24	84	24	300	72	24
Total Rated	288			108		396		

- There are presently 288 rated/design cell beds (72.7%) and 108 rated/design dormitory beds (27.3%).

Existing Rated Bed Breakout			
Cells	288	72.7%	70.0%
Dorms	108	27.3%	30.0%
Total	396	100.0%	100.0%

Middle River Regional Jail Needs Assessment

- The current shortfall – number of beds/inmates compared to design/rated capacity is as follows in the table below. Actual cell beds are twice the intended number while actual dormitory beds are three times the intended number.

	Rated Beds	Actual General Purpose Beds	Shortfall
Cell Units	288	576	288
Dormitory	108	339	231
Total	396	915	519

- While custody level and housing type do not correlate directly, the number of rated/design cell beds resembles the State Standards of 30% Maximum, 40% Medium and 30% Minimum, if we assume that all Medium and Maximum custody inmates are in cells (which of course they are not as operationally Medium custody inmates are frequently housed in dormitories).
- The rated/design breakout of existing housing units by gender is as follows:

Existing Rated Bed Breakout by Gender		
Male	312	78.8%
Female	84	21.2%
Total	396	100.0%

- If 400 new dormitory beds are added, the new breakout would be as follows:

New Rated Breakout		
Cells	288	36.2%
Dormitory	508	63.8%
Total	796	100.0%

- According to the recent data, 25%-26% of the existing inmate population are female; this is inflated presently as all of Rockingham's females are temporarily housed at MRRJ. In discussions with staff 18%-20% of new beds should be designated for females (this needs to be confirmed). The 400-bed addition would be broken out as follows.

Add 400 Additional Beds-Dormitory		
	Percent	Beds
Male	80.0%	320
Female	20.0%	80

Middle River Regional Jail Needs Assessment

- By adding 400 additional dormitory beds the new rated capacity would be 796. This newly configured MRRJ would have 288 cells (36.2%), and 508 dormitory beds (63.8%).

New Rated Breakout		
Cells	288	36.2%
Dormitory	508	63.8%
Total	796	100.0%

Number of Stories and Aggregate Floor Space

The MRRJ is a one level structure (with mezzanines in housing areas), with an aggregate floor space (jail only) of approximately 212,000 SF.

The single-story facility contains housing units arranged in four general housing areas (generally separated by corridors), consisting of 18 cell blocks and eight dormitories.

- Eighteen (18) cell blocks range in size from 600 SF – 2,760 SF and are rated to house between 12 – 47 inmates each in single cells.
- Each cell has two permanent beds.
- There are eight (8) dormitories ranging in size from 1,020 SF to 1,530 SF; rated to house 108 inmates and regularly accommodating over 320
- Work release/minimum custody/trustee dorm areas consist of (2) two rooms which currently have 54 beds
- Original jail design included approximately 24 beds for Work release/minimum custody/trustees
- Twenty-nine (29) spaces are designated as booking/holding/intake space.
- Seven (7) medical beds and thirty-eight (38) restricted housing (segregation) beds.
- Intake, food service, laundry inmate property, administration, program and recreation areas are centrally located.

General Population Operating Capacity

The rated capacity of the MRRJ is 396. The general purpose housing capacity by cell block and dormitory space is presented in the table that follows.

Middle River Regional Jail Needs Assessment

Middle River Regional Jail General Purpose Housing								
Housing Unit		Type	Use	Custody	Rated Capacity	Number of Cells	Cell Type	Number of Beds
MA	MA 1	Dorm	Male	Min	18	--	--	54
	MA 2	Dorm	Male	Min	18	--	--	51
	MA 3	Dorm	Male	Min	12	--	--	36
	MA 4	Dorm	Male	Min	12	--	--	36
	MA 5	Cell	Male	Min/Trusty	24	24	Single	47
	MA 6	Cell	Male	Med	24	24	Single	47
MB	MB 1	Cell	Male	Max	12	12	Single	23
	MB 2	Cell	Male	Max	12	12	Single	23
	MB 3	Cell	Male	Max	12	12	Single	23
	MB 4	Cell	Male	Max	12	12	Single	23
	MB 5	Cell	Male	Med	12	12	Single	23
	MB 6	Cell	Male	Med	12	12	Single	23
FA	FA 1	Cell	Female	Max	12	12	Single	24
	FA 2	Cell	Female	Med	12	12	Single	24
	FA 3	Dorm	Female	Min	12	--	--	45
	FA 4	Cell	Female	Min/Trusty	6	6	Single	12
	FA 5	Dorm	Female	Min	12	--	--	45
	FA 6	Cell	Female	Med	12	12	Single	24
	FA 7	Cell	Female	Max	6	6	Single	12
MC	MC 1	Cell	Male	Med	24	24	Single	47
	MC 2	Cell	Male	Med	24	24	Single	47
MD	MD 2	Cell	Male	Med	24	24	Single	47
	MD 3	Cell	Male	Med	24	24	Single	47
CL	CL 1	Cell	Male/Female	Class	12	12	Single	24
	CL 2	Cell	Male/Female	Class	12	12	Single	24
CC	CC 1	Dorm	Male	Min	12	--	--	33
	CC 2	Dorm	Male	Min	12	--	--	54
Total					396	288		918

- Eighteen cell blocks have a rated capacity of 276 detainees; all cells are designed for a single inmate; there are approximately 540 inmates in single cells.

Middle River Regional Jail Needs Assessment

Middle River Regional Jail Cell Block Square Footage and Occupancy						
Unit	Rated Capacity	Inmate Pop 10/1/2019	Type	Cell	Dayroom	Total
MA 5	24	47	Single	1,920	840	2,760
MA 6	24	47	Single	1,920	840	2,760
MB 1	12	23	Single	960	420	1,380
MB 2	12	23	Single	960	420	1,380
MB 3	12	23	Single	960	420	1,380
MB 4	12	23	Single	960	420	1,380
MB 5	12	23	Single	960	420	1,380
MB 6	12	23	Single	960	420	1,380
FA 1	12	24	Single	960	420	1,380
FA 2	12	24	Single	960	420	1,380
FA 4	6	12	Single	480	420	900
FA 7	6	12	Single	480	210	690
MC 1	24	47	Single	1,920	840	2,760
MC 2	24	47	Single	1,920	840	2,760
MD 2	24	47	Single	1,920	840	2,760
MD 3	24	47	Single	1,920	840	2,760
CL 1	12	24	Single	960	420	1,380
CL 2	12	24	Single	960	420	1,380

- Eight dormitories are designed to accommodate 108 detainees and generally house over 320 persons.

Middle River Regional Jail Dormitory Housing SF and Occupancy			
Unit	Rated Capacity	Inmate Population 10/1/2019	Total Square Feet
MA 1	18	54	1,530
MA 2	18	51	1,530
MA 3	12	36	1,020
MA 4	12	36	1,020
FA 3	12	12	1,020
FA 5	12	45	1,020
CC 1	12	33	1,020
CC 2	12	54	1,020

Occupancy by Cell Block/Dormitory Housing

- Standards require that cell block housing provide for 115 SF of sleeping and living space for each inmate in celled housing and require 85 SF for each dormitory resident.
- Based on the number of inmates held in the Jail, facility cell blocks (sleeping and living areas combined) typically provide between 57 SF – 60 SF per inmate; dormitories provide between 22 SF - 42 SF per person.

Middle River Regional Jail General Purpose Housing Square Footage								
Block	Type	Rated Capacity	Sept 2019 Population	Square Feet			Square Feet Per	
				Cell	Dayroom	Total	Rated Capacity	Sept 2019 Population
MA 1	Dorm	18	54	--	1,530	1,530	85.0	28.3
MA 2	Dorm	18	51	--	1,530	1,530	85.0	30.0
MA 3	Dorm	12	36	--	1,020	1,020	85.0	28.3
MA 4	Dorm	12	36	--	1,020	1,020	85.0	28.3
MA 5	Cell	24	47	1,920	840	2,760	115.0	58.7
MA 6	Cell	24	47	1,920	840	2,760	115.0	58.7
MB 1	Cell	12	23	960	420	1,380	115.0	60.0
MB 2	Cell	12	23	960	420	1,380	115.0	60.0
MB 3	Cell	12	23	960	420	1,380	115.0	60.0
MB 4	Cell	12	23	960	420	1,380	115.0	60.0
MB 5	Cell	12	23	960	420	1,380	115.0	60.0
MB 6	Cell	12	23	960	420	1,380	115.0	60.0
FA 1	Cell	12	24	960	420	1,380	115.0	57.5
FA 2	Cell	12	24	960	420	1,380	115.0	57.5
FA 3	Dorm	12	45	--	1,020	1,020	85.0	22.7
FA 4	Cell	6	12	480	210	690	115.0	57.5
FA 5	Dorm	12	45	--	1,020	1,020	85.0	22.7
FA 6	Cell	12	24	--	420	420	35.0	17.5
FA 7	Cell	6	12	480	210	690	115.0	57.5
MC 1	Cell	24	47	1,920	840	2,760	115.0	58.7
MC 2	Cell	24	47	1,920	840	2,760	115.0	58.7
MD 2	Cell	24	47	1,920	840	2,760	115.0	58.7
MD 3	Cell	24	47	1,920	840	2,760	115.0	58.7
CL 1	Cell	12	24	960	420	1,380	115.0	57.5
CL 2	Cell	12	24	960	420	1,380	115.0	57.5
CC 1	Dorm	12	33	--	1,020	1,020	85.0	30.9
CC 2	Dorm	12	54	--	1,020	1,020	85.0	18.9
		396	918					

Administrative, Operating and Inmate Program Space and Impact of Physical Plant Limitations Relative to Operations and Security

In general, the administrative and program space, food services, laundry, medical, and mechanical/electrical areas are not sufficient for the number of persons housed in Jail. An overview of existing space follows below.

Building Entrance/Public Lobby

The front reception desk currently houses a security officer. This is an open workstation and does not offer any security or protection to the individuals manning this station. This area should be enclosed with a secure access to the administrative office area and be protected by bullet resistant glass and materials.

Housing Areas

1. Due to the large number of Community Custody inmates, both Work Force and Work Release, these inmates are being housed in the pod designed for female inmates. These inmates exit to the outside near the Loading Dock, away from the front of the building.
2. Due to the larger than anticipated number of female inmates, the area of the jail designed to house maximum custody male inmates is being used to house minimum, medium, and maximum custody female inmates.
3. Due to the large number of cells needed to treat inmates for medical and health related issues, approximately half of the area designed as restricted housing (segregation) cells is being used to house inmates undergoing medical care.
4. The housing pods originally designed for classification, adjacent to the jail's intake area, are being used to house maximum custody inmates due to them being displaced by the large female inmate population.
5. There is an inadequate supply of cells separate from general housing to serve inmates with mental health needs and deliver the treatment and services they need.
6. Existing yard walls between Housing Units may need to be torn down/ re-configured for new construction and/or to provide additional exit discharge refuge areas.

Administrative Office Area

1. The administrative office area functions well but is lacking in space to accommodate the additional staff and jail authority member meetings.
2. The facility needs additional administrative office space to house current and future staff as the jail authority grows.
3. There is currently no space large enough to serve as a muster room or to hold Jail Authority Board meetings.

Middle River Regional Jail Needs Assessment

4. At the existing “west” Visiting Booths, the secure perimeter dividing wall was not built to save money. If an expansion occurs, these visiting booths will be needed and secure walls with visiting windows will need to be built
The existing kitchen was designed to provide food for the rated capacity of 396 inmates, plus a future planned expansion to a capacity of approximately 600 inmates.

Kitchen

1. The kitchen is crowded as more staff and inmate labor are working in the kitchen to meet the demand for meal preparation.
2. The prep space is filled up with carts, prep tables, and inmate workers which limits visibility for officers to monitor the inmate kitchen labor force.
3. The prep area limits the ability of the kitchen staff to meet the jail’s meal schedule.
4. The food storage areas including freezer space, refrigerator space, and dry storage are not large enough to provide the necessary food storage for the current and anticipated future inmate population. The facility needs approximately 50% more space to store food for the current population and approximately 100% more storage space to store food for the population anticipated in 10 years.

Laundry

1. The laundry facilities are currently operating around 22 hours per day to keep up washing uniforms, and linens.
2. The washers and dryers are wearing out more quickly because of the heavier use.
3. The laundry is struggling to meet the need due to lack of workspace, insufficient quantity of machines, and hours in the day.

Medical

1. The medical area has four cells. The jail’s restricted housing (segregation) area is being used to house, on average, 12 additional inmates with medical needs for a total of 16 inmates in the medical area on average.
2. Additional dedicated medical cells are needed to provide the healthcare services necessary and to keep the restricted housing (segregation) area available for its intended use.
3. The current medical treatment area was designed to function as a clinic. Ideally this would be designed as an infirmary to house inmates while they recover from illness.

Intake and Property Storage

1. The property storage area is full and needs to be expanded to house the current and anticipated future inmate population. Suggestion has been made to convert two Male Dorms down the hall into additional Property Storage, but equivalent dormitory space would need to be added elsewhere.
2. As reported, Intake and Intake Holding areas are adequate, despite the increased population.

3. Magistrate is currently located in Intake with no direct public access. Suggestion has been made to relocate the Magistrate's office to the Community Custody area, which does have public access. Access from Intake could be provided by converting one Intake holding cell to a sallyport that leads to the new Magistrate's area.

Impact of Physical Plant Limitations Relative to Operations and Security

The Jail is operating with an average daily population that far exceeds its design capacity. As such, many areas of the Jail are not sufficient. The density of the inmates in general population housing, combined with the absence of program and recreation space contributes to the potential for management problems. Administrative space and ancillary resources are inadequate for the number of inmates who are normally incarcerated. Program space is undersized for the size of the inmate population. Noncontact and contact visitation space is inadequate for the number of inmates housed in the jail. Inmate storage space is insufficient, as is commissary and canteen space. The kitchen is significantly undersized for the number of inmates held in the facility. Dry, cold, and frozen food storage is insufficient. Medical, dental and mental health areas are inadequate.

Limitations relative to operations and security are noted in the following areas:

- Warehouse space not sufficient
- Maintenance workspace not sufficient
- Loading dock and cold storage insufficient and there are security concerns
- Kitchen space is inadequate for the inmate population number
- Laundry space and equipment is insufficient
- Medical space is not operationally efficient
- Administration and program is not sufficient
- Magistrate, professional visitation, video visitation and specialty housing need to be enhanced and expanded
- Lobby and administration space security should be addressed
- Current training space is not sufficient
- Multipurpose space is not adequate for the number inmates housed in the Jail

Jail-Based Inmate Programs and Services

The crowding of the jail and the lack of program space severely constrains the capability of the MRRJ to deliver inmate program services. However, the jail does provide detainees with basic program participation opportunities; operates a robust work release program, a community work force program and a small Home Electronic Monitoring (H.E.M) program.

The following sections present summaries of ongoing programming at other local and regional jails, and represent opportunities at the MRRJ once adequate space is available to accommodate the development and operation of a more robust program operation.

Specific Examples of Robust Jail-Based Programs in Other Localities in the Commonwealth

Work Release (WR) Program

Nearly all jails in the Commonwealth operate work release. Work Release programs offer inmates the opportunity to maintain employment or seek new employment while incarcerated. Many programs work with employers, probation officers, family members and the court system. Global positioning system (GPS) units and random drug testing are used to monitor inmates on the program may be component of the program. Often participants are required to attend programs such as AA, NA and various life skills classes, and have other responsibilities as assigned by the Court.

The Prince William County reports that approximately 1,000 offenders are placed in their adult detention Work Release program each year. The City of Richmond jail has operated a WR program since 1998. Two staff are assigned to the Richmond program that provides programming for an average of approximately 20 offenders per month. The Henrico County Regional Jail maintains an active work release program. With the approval of the court, inmates who meet the following criteria are allowed to leave jail, go to work and report back to jail at the end of the work day. Participants must (1) have a full time job; (2) work a minimum of 36 hours each week; (3) work not more than 12 hours per day, including travel time; (4) must have their own reliable transportation and (5) are required to pay \$10 per day for each day of work. Based on the most recent data available to the Consultant, between 200-250 inmates per year participate in the Henrico work release program. The County has approximately 60-70 males and females in the work release program.

Public Work Force Program

Many jails in the Commonwealth maintain a Work Force Program consisting of inmates who have been screened and meet the criteria to perform community-based work under the supervision of correctional officers. Daily work activity for the Work Force may include such activities as seasonal mowing, landscaping, painting and maintenance projects. Some programs are responsible for responsible for some janitorial services in the County or City as well as trash pickup details along roadways.

Prince William County operates a fairly large program out of its regional adult detention center. In addition to normal maintenance tasks in public spaces, the Prince William County program provides services to maintain the grounds of government offices and a number of historical cemeteries. During inclement weather work force participants assist in the removal of debris, snow and ice. It is estimated that this program provides between 8,000 – 10,000 hours of service to the community. Five correctional officers typically manage their large program and supervise the inmates assigned to it.

The City of Richmond operates two alternative sentencing programs that are not technically “Inmate Work Force” programs: (1) the New Environmental Action Team (NEAT), and (2) the Misdemeanor Community Service Program (MCSP). MCSP is designed to allow sentenced misdemeanants who are employed to remain employed while completing their sentences and performing community

service work on the weekends. NEAT is designed as a daily work program (detail) whereby sentenced misdemeanors work eight hours per day. Based on the most recent data available a total of 1,637 offenders participate in NEAT (an average of 31 per week), and a total of 3,085 offenders (an average of 59 per week) participate in MCSP.

In the consultant's experience the jails across Virginia that operate the most robust jail-based programs have several important characteristics in common: (1) sufficient space to provide programs and services (in both housing and support areas); (2) they have formed viable collaborations with community volunteer and community agency groups, (3) they have demonstrated commitments to providing programs and services to offenders through their jail operations, and (4) programming has the support of key decision makers in their communities.

The following three jails offer jail-based programming that exhibit these characteristics.

Henrico County Regional Jail (rated capacity = 787)

Medical and Mental Health Services

Medical and Mental Health services are available at two jails (Jail East and Jail West) operated by the County facilities 24 hours per day, and seven days per week by both employed and contracted personnel. A minimum of three nurses are on duty daily, in addition to support staff, and medical services are supervised by a full time Medical Director who is an employee of the Sheriff's Office. All other staff in the medical department are contract staff. A Nurse Practitioner and Primary Physician rotate schedules between the two facilities. Sick call is held daily at both facilities and pharmaceuticals are provided by contracts with local pharmacies. While there are two examination rooms at Jail West, there is no infirmary; all inmates requiring infirmary care are transported to Jail East. Medical staff include a Medical Director, Nurse Practitioner, a full-time Registered Nurse Health Administrator, one Registered Nurse, four part-time and 13 full time LPNs.

Mental health services include the traditional management of psychotropic medications, individual and group counseling and extensive formal substance abuse treatment and counseling. The Henrico County Department of Mental Health provides a Psychologist and two Mental Health Counselors onsite at Jail West 40 hours per week; additional personnel schedule regular visits to the facility. Mental health personnel at Jail East include a Psychiatrist, a Mental Health Specialist, three Mental Health Clinicians and various substance abuse treatment specialists.

Educational and Vocational Programs

Henrico County Jail Education Service provides an array of academic and vocational programs at both facilities. The teachers and instructors are all licensed with the Virginia Department of Education and are Henrico County public schools teachers contracted by the Sheriff's office to work with jail programs. Education staff include one administrative assistant and nine teachers. Jail West has two academic instructors; Jail East has four teachers, and three vocational education instructors. A special education coordinator works at both sites. The education program includes literacy and general education as well as ABD, pre-GED, GED preparation and testing, special education instruction, and

“English as a Second Language”. Vocational instruction includes instruction in Automotive technology, Computer technology, Keyboarding, Business Computer Applications and Cosmetology.

Substance Abuse Treatment

Henrico County operates a large and nationally recognized Residential Substance Abuse Program for inmates that includes substance abuse counseling, both individual and group, as well as AA, NA programming. In addition, at Jail East there are 152 beds dedicated to the “Recovery In a Secure Environment” (RISE) program. This phased residential substance program is provided for both male and female detainees. Begun in August 2000, in a 36-bed direct supervision housing pod, the program consists of separate housing for participants, a 12-14 hour per day schedule of activities and in-house substance treatment. Upon release from jail, graduates participate in twice-a-week follow-up aftercare sessions. Approximately 1,100 offenders per year entered the RISE program each year.

Home Electronic Monitoring (HEM)

The Jail has an Electronic Home Monitoring program that allows participants to serve their sentences in the confines of their home. Home Incarceration must be ordered by sentencing court, and HEM must be granted on each charge before the offender is placed in the program. Participants must sign a behavior contract, have an operable telephone, pay an initial \$25 processing fee, and are required to reimburse the County at a rate of \$10 per day.

Alternative Non-consecutive Sentencing (Weekend Sentencing)

There are a large number of offenders who report to the Henrico Jail to serve their sentences on weekends. As with work release and home incarceration, non-consecutive sentences must be ordered by the Court and offenders serving weekend sentences are typically at the jail from Friday at 6:00 pm, to Sunday at 6:00 pm.

Prince William Manassas (ADC) Adult Detention Center (rated capacity = 667)

With a total of 276 authorized sworn staff and 63 authorized civilian personnel, the ADC offers a robust number of programs and services to incarcerated offenders. Recently, the ADC had 17 authorized in-house medical staff; assigned 6 staff to work release, and 4 staff to the public work force program. In addition to a large number of volunteers, there are over 10 Classification personnel assigned to inmate programs. The facility offers a broad array of educational services, substance abuse counseling, religious programming and recidivism prevention.

Classification Department Inmate Programs

A variety of programs and services is provided for inmates. They include General Education Development (GED), AA/NA, Parenting Skill classes, Church Services and Bible Study. Supervised by an Inmate Programs Coordinator who is responsible for overseeing volunteer services, volunteers attend a three-hour orientation session giving

them information on the inmate population, classification levels, rules and regulations. There are approximately 350-400 volunteers involved in programming.

Medical Services

Medical services are provided by Registered and Licensed Practical Nurses Correctional Health Assistants as well as Mental Health Therapists. The medical section has examination rooms, a nurse's station and a negative pressure room designed to accommodate inmates with respiratory diseases. The ADC also contracts for medical services and includes one Physician Assistant on site for 8 hours per week; maintains tele-psychiatry sessions per week, and on-site psychiatric counseling. The ADC also contracts for dental and mobile x-ray services on an "as needed" basis.

Work Release

The ADC maintains a viable Work Release program for eligible inmates. The program offers inmates the opportunity to maintain employment or seek new employment while incarcerated. This program works with employers, probation officers, family members and the court system. Global positioning system (GPS) units and random drug testing are used to monitor inmates on the program. Many participants are required to attend programs such as AA, NA and various life skills classes. Between 50-75 inmates per day participate in the program.

Chaplain Services and Programs

Chaplaincy services inside the ADC are provided by the Good News Jail and Prison Ministry. The Chaplain oversees a broad array of inmate programs in conjunction with a number of local volunteer agencies, and: (1) recruits volunteers for services; (2) plans, schedules and oversees all religious services; (3) coordinates pastoral visitation services, and (4) oversees all faith-based programming.

Life Skills and Behavioral Change

A life skills program is managed by D&A Behavioral Solutions, Inc. The goal of the program is to reduce recidivism by equipping inmates to understand and identify "flawed thinking, beliefs, attitudes and values that have caused their problems, as well as learned personal self-management, general social skills, and personal responsibility, e.g., accountability vs. excuses." The emphasis is on developing "personal dignity, which is the vital catalyst to changing aberrant behavior." Participation is voluntary and the program claims a successful completion rate in excess of 80%.

Section V

Community Based Programs

Community Programs Process and Structure Overview

Jails provide the judicial system with two types of confinement services. Jails provide secure confinement for individuals awaiting trial on criminal charges, and offenders sentenced by the court to serve time as a part of their sentences. Alternative detention and diversion programs are designed to provide these services in a manner other than by confinement in jail. These programs can be conceptually divided into: (1) pretrial programs, and (2) post-sentence alternative programs. Both provide the system with options other than secure confinement.

Recognizing the high cost of secure confinement and the potential cost effectiveness of alternatives, the 1994 Special Session of the Virginia General Assembly enacted the Pretrial Services Act, and the Comprehensive Community Corrections Act for Local Responsible Offenders. Each of these Acts provide the statutory framework and funding pipeline for local development of “alternatives to incarceration” programs. Program options can be implemented that target both pre- and post-trial populations.

Non-confinement Alternatives

Pretrial Programs

Pretrial services programs perform two important functions in the effective administration of local criminal justice systems:

- They gather and present information about newly arrested defendants and about available release options for use by judicial officers in deciding what (if any) conditions are to be set for defendants’ release before trial.
- They supervise the defendants released from custody during the pretrial period by monitoring their compliance with release conditions and helping ensure they appear for scheduled court events.

When both functions are performed well, localities can minimize “unnecessary” pretrial detention, reduce jail crowding, protect the public and ensure appearance at court hearings.

Pretrial services programs are specifically designed to reduce the number of individuals held in jail awaiting trial. The only reasons for holding an individual in secure confinement until trial are: (1) to ensure that the individual appears for all scheduled court appearances, or (2) to remove an accused from society if that individual poses a threat to the public safety, or to himself. Persons considered a threat to themselves include those individuals who are intoxicated or under the influence of drugs. This type of threat to oneself is normally a short term condition, and is generally followed by release on a non-secure or secure bond. The threat to public safety is a subjective determination that is initially established by the magistrate and reviewed by the bench. For the individuals in this category (flight risk/nonappearance for future court dates), pretrial services programs provide valuable information that may assist a judge in reviewing the magistrate's bail decision.

With a pretrial services program, newly arrested persons are interviewed and information is collected. After investigating and verifying the employment and family status, evidence of community ties and criminal history, recommendations are made to the court concerning the conditions of bail. These conditions may range from release on personal recognizance or on

secure bond, or release under the supervision of the pretrial program. Statewide, the level of pretrial supervision may range from electronic monitoring, house arrest, or periodic visits to the home and place of employment. Additionally, pretrial programs can assist in assuring court appearances by individuals released on their own recognizance by reminding an individual of their scheduled court appearance by post card or phone contact.

Magistrate

Over the years in Virginia, the magistrates' discretion (certainly as a lone decision maker) has been reduced, and there are two statutes associated with the initial detain/release decision that can "drive" the size of the incarcerated pretrial detained population. Section 19.2-120, first enacted in its present form in 1996, had less than a half dozen offenses for which a denial of bail, subject to rebuttal, by a magistrate is required (a translation of "no condition or combination of conditions will reasonably assure the appearance of the person or the safety of the public..."). Over the past eight years starting in 1999 the number of offenses has been increased to 86. A second statute also requires "[a]ny person arrested for a felony who has previously been convicted of a felony, or who is presently on bond for an unrelated arrest in any jurisdiction, or who is on probation or parole, may be released only upon a secure bond. This provision may be waived with the approval of the judicial officer and with the concurrence of the attorney for the Commonwealth..."

This amendment was also introduced in 1999 so the court at the initial appearance must get concurrence from the Commonwealth Attorney if the intent is to release on other than a secured bond. The Magistrate Manual directs the magistrate under Sections D and F, specifically the second paragraph of each, to "...hold a defendant without bail" if arrested for any of the "trigger" offenses and that under 19.2-123 a magistrate can "release on a simple recognizance or unsecured bond only with the concurrence of the Commonwealth Attorney."

- Existing statutes and guidelines serve to reinforce the importance of coordinating informed decision making early in the processing of defendants through the justice system. Early release decision making can have a substantial impact on the size of the pretrial jail populations.

Information available to the magistrate at an initial hearing is at best minimal and the magistrate often does not have verified information on the arrestee's prior criminal, employment, or residential/community histories. Often limited to self-reported information from the arrestee, and from the arresting officer, and with minimal reliable information available, the judicial officer may lean to minimizing the risk to the public safety by committing the individual to incarceration.

- Increasing the availability of reliable information to inform magistrate decision making should be a priority.

When the accused appears in court on the following morning, the information available to the District Court Judge, without a pretrial services program, will generally not have improved significantly from the information available to the magistrate. At arraignment, a Judge reviews the conditions of bail established by the magistrate, and may amend any conditions by raising or lowering the level of a secure bond, or converting a secure bond to a non-secure bond. The review of the conditions of bail is the second point in the criminal justice system when pretrial services can be instrumental in reducing the number of individuals incarcerated while awaiting trial. The availability of pretrial services programming increases the probability that reliable information is used in decision making.

Alternative Detention Programs

For some crimes, sanctions that involve community service, restitution, continuation of employment and maintenance of family connections are acceptable to the public and are more cost effective than jail incarceration. Alternative-to-confinement programs provide the judiciary with sentencing options.

After an offender has been found guilty, the bench has a number of sentencing options. If the individual is found guilty of a felony, sentencing is normally delayed until completion of the pre-sentence investigation (PSI) report. Often the pretrial conditions of bail/incarceration are continued until the completion of the pre-sentence report. PSI reports generally take approximately 60 days to complete and, upon completion, a sentence is normally imposed. The sentence may involve incarceration, a suspended sentence, some level of probation, fines, restitution or any combination of the aforementioned.

If designed to allow continuation of employment, provide some level of community service, provide counseling and/or provide an opportunity for victim restitution, alternatives can be effective in providing the desired level of punishment while ensuring that the public safety function is not compromised. These programs can be effective in assisting those convicted of nonviolent crimes in maintaining family and community ties. If an offender's sentence involves incarceration, normally that individual will be released back to society at some future date. Transition services, job training programs, halfway houses and residential programs can assist in the return to society and can have a positive impact on released inmates remaining "crime free" after release.

The Comprehensive Community Corrections Act for Local-Responsible Offenders provides the legal authority and funding authorization for establishing a community-based probation program. For localities that establish a community corrections program and seek state funding for the operation of such a program, the *Act* mandates the provision of certain services and programs. The mandated programs and services are:

- community service,
- home incarceration with or without electronic monitoring,
- electronic monitoring, and
- substance abuse assessment, testing and treatment.

In addition, the *Act* provides for the establishment of optional programs that are identified below:

- local day reporting center programs and services
- local halfway house programs and services for the temporary care of adults placed on probation, and
- law enforcement diversion into detoxification center programs

Localities, establishing community corrections programs, are required to establish a community criminal justice board, and submit biennial plans to the Department of Criminal Justice Services identifying the components of the local correctional program and specifying the funding required to operate them.

An overview of community-based programs available within the Regional Jail Service Area is displayed in the table that follows.

Middle River Regional Jail Needs Assessment

Program/Service	Administrative Responsibility
Pretrial Services	Rockingham-Harrisonburg Court Services Unit Blue Ridge Court Services
Community Corrections	Rockingham-Harrisonburg Court Services Unit Blue Ridge Court Services
Electronic Monitoring (EM)	Rockingham-Harrisonburg Court Services Unit Blue Ridge Court Services
Home Incarceration	Not Available
Probation Supervision/ substance abuse assessment, testing & treatment	<i>Local</i>
	Rockingham-Harrisonburg Court Services Unit
	Blue Ridge Court Services
	<i>State</i>
	P&P District 39 P&P District 12
Day Reporting Center (optional)	Rockingham-Harrisonburg Court Services
Halfway House Programs and Services (optional)	Not available
Law Enforcement Diversion - Detox Center Programs (optional)	Not available
Adult Drug Court	Blue Ridge Court Services Rockingham-Harrisonburg Court Services
Reentry Programming	<i>Local</i>
	Local Reentry Council
	<i>State</i>
	Department of Corrections

Rockingham-Harrisonburg Court Services Unit (CSU)

The CSU program provides pretrial and local probation supervision services to the local community. The agency provides pretrial, probation and related services to approximately 1,100 adult offenders/defendants annually. Staffing consists of a Director, 3 Pretrial Officers and 3.5 Probation Officers. In addition to providing pretrial, local probation services, day reporting and adult drug court, the CSU operates the following programs:

Crisis Intervention Team Program (CIT): The CIT is well documented and successful model of improving law enforcement interactions with people experiencing acute episodes of mental illness. Where law enforcement officers historically may have seen jail confinement as the only recourse, this training program is designed to educate and prepare law enforcement officers who come into contact with people in crisis, to recognize the signs and symptoms of mental illness and to respond effectively and appropriately.

Litter Control Program (LCP): A locally funded alternative program for incarceration/deferred judgment cases.

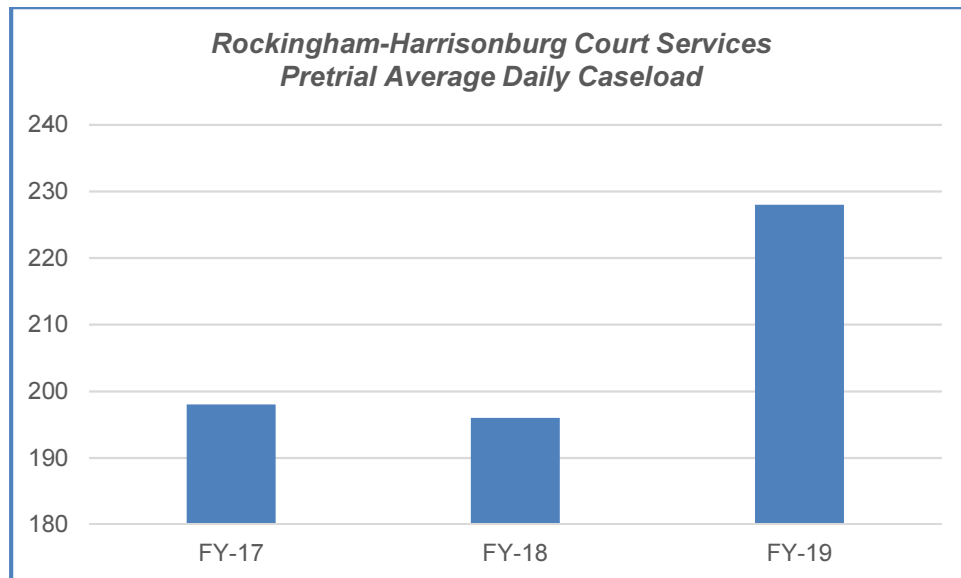
Integrated Criminal History Records Information Systems Project (ICHRIS): The project is a collaboration between local enforcement agencies that are connected to a regional database system and attempts to facilitate the timely exchange of computer information between agencies.

Pretrial Services

The Rockingham-Harrisonburg Court Services Program provides local pretrial supervision for the County of Rockingham and City of Harrisonburg. Services are primarily targeted toward those arrested for non-violent crimes or those offenders who receive a bail but remain detained in jail following an initial bond hearing. Supervision includes substance abuse testing, assessment, and weekly contact with pretrial officers.

Rockingham-Harrisonburg Court Services Unit - Pretrial Services									
Statistic	Misdemeanants			Felons			Total		
	FY-17	FY-18	FY-19	FY-17	FY-18	FY-19	FY-17	FY-18	FY-19
Total Placements for the Year	216	159	149	380	383	359	596	542	508
Total Defendants Terminated	267	197	192	427	386	441	694	583	633
Active Caseload Last Day of FY	43	46	37	140	190	159	183	236	196
Total Supervision Days for the Year	17,234	12,758	14,072	54,874	58,744	69,110	72,108	71,502	69,110
Average Daily Caseload for the Year	47	35	39	150	161	189	198	196	228
Average Length of Supervision (Days)	80	80	94	144	153	193	121	132	164

Middle River Regional Jail Needs Assessment



FY-19 Pretrial Services Provided		
New Service Placements	Number	Percent
1. Substance Abuse Testing	399	95.5%
2. Substance Abuse Education	0	0.0%
3. Substance Abuse Counseling	1	0.2%
4. Alcohol Testing	0	0.0%
5. Anger Management	0	0.0%
6. Shoplifters Group	0	0.0%
7. Domestic Violence Group	0	0.0%
8. Sex Offender Treatment	0	0.0%
9. Electronic Monitoring (EM)	15	3.6%
10. Mental Health Assessment	0	0.0%
11. Mental Health Screening	0	0.0%
12. Home Incarceration	0	0.0%
13. Other	3	0.7%
Total	418	100.0%

Rockingham-Harrisonburg Court Services FY-19 Pretrial Services Caseload		
Court Decision	Number	Percent
Recognizance	1	0.3%
Unsecured Bond	19	5.5%
Secured Bond	68	19.5%
Denied Bail	260	74.7%
Pretrial Supervision	Number	Percent
Yes	56	16.1%
No	292	83.9%
Placements Activated	Number	Percent
ROR	2	0.4%
Unsecured Bond	217	39.0%
Secured Bond	338	60.7%
Active Placements Closed	Number	Percent
Successful	441	66.7%
Unsuccessful	140	21.2%
FTA	39	5.9%
New Arrest	41	6.2%

Local Probation

The OCJS program also provides general and intensive local probation supervision for the Rockingham-Harrisonburg Service Area. Offenders sentenced to any term of incarceration in an adult facility are eligible for the program. The entire sentence of incarceration may be suspended, or if the court elects, may include a split sentence. “State Responsible Felons” are not eligible for this program and placements in the Community Corrections Program are made by the sentencing judge. In addition to ordering specific periods of local probation supervision, the Court may order offenders to comply with other conditions that are monitored by probation officers. Statewide, additional conditions may include community service, payment of restitution, participation in mental health counseling, anger management, substance abuse counseling or treatment programs, or drug testing.

Middle River Regional Jail Needs Assessment

Rockingham-Harrisonburg Court Services Unit - Local Probation Services									
Statistic	Misdemeanants			Felons			Total		
	FY-17	FY-18	FY-19	FY-17	FY-18	FY-19	FY-17	FY-18	FY-19
Total Placements for the Year	412	361	375	7	4	13	419	365	388
Total Offenders Terminated/Supervision	512	392	361	6	6	8	518	398	369
Active Caseload Last Day of FY	312	304	311	5	5	12	317	309	323
Total Supervision Days for the Year	135,637	114,025	109,844	2,148	1,471	3,147	137,785	115,496	112,991
Average Daily Caseload for the Year	372	312	301	6	4	9	378	316	310
Average Length of Supervision (Days)	329	316	293	307	368	242	636	684	535
Total Community Service Hours							8,060	4,584	4,281
Restitution							\$102,955	\$63,789	\$44,378
Court Costs and Fines							\$20,249	\$9,827	\$9,039
Program Fees							\$28,378	\$24,261	\$21,961

Rockingham-Harrisonburg Court Services Unit FY-19 Local Probation Services Provided		
New Service Placements	Number	Percent
1. Substance Abuse Testing	351	42.8%
2. Community Service	131	16.0%
3. Substance Abuse Screening	1	0.1%
4. Anger Management	17	2.1%
5. Domestic Violence Group	49	6.0%
6. Shoplifters Group	68	8.3%
7. Substance Abuse Assessment	37	4.5%
8. Substance Abuse Counseling	72	8.8%
9. Sex Offender Treatment	3	0.4%
10. Parenting Class	1	0.1%
11. Substance Abuse Education	32	3.9%
12. Alcohol Testing	0	0.0%
13. Mental Health Screening	0	0.0%
14. Mental Health Treatment	23	2.8%
15. Mental Health Assessment	12	1.5%
16. Electronic Monitoring	1	0.1%
17. Other	23	2.8%
Total	821	100.0%

Blue Ridge Court Services (BRCS)

The BRCS program provides pretrial and local probation supervision services to the courts of Staunton, Waynesboro, Lexington, Buena Vista, Rockbridge, Highland and Augusta County.

With a total staff of 14, BRCS provides traditional pretrial and local probation services and operates the following programs: Restorative Justice Services, Domestic Violence Programs, Home Electronic Monitoring, Re-entry Services, Drug Court and a Therapeutic Docket Program.

Pretrial Services

- In FY-18, BRCS staff performed 1,147 pretrial investigations. A total of 839 pretrial defendants were placed under pretrial supervision.

Blue Ridge Court Services						
Defendants Placed on Pretrial Supervision						
	FY-17		FY-18		FY-19	
Bond Type	Number	Percent	Number	Percent	Number	Percent
Recognizance	143	16.2%	148	20.9%	100	11.4%
Unsecured	327	37.0%	248	35.0%	375	42.9%
Secured	413	46.8%	390	55.0%	399	45.7%
Total	883	100.0%	709	100.0%	874	100.0%

Blue Ridge Court Services						
Pretrial Supervision Outcomes						
	FY-17		FY-18		FY-19	
Outcome	Number	Percent	Number	Percent	Number	Percent
Successful	605	71.3%	492	60.2%	411	56.9%
FTA	48	5.7%	52	6.4%	50	6.9%
New Arrest	52	6.1%	91	11.1%	99	13.7%
Conditions Violated	144	17.0%	174	21.3%	151	20.9%
Other	0	0.0%	8	1.0%	11	1.5%
Total	849	100.0%	817	100.0%	722	100.0%

Local Probation

BRCS received 1,015 probation placements in FY-18; 35% of placements were from Augusta County, 31% from Staunton and 23% of placements were from Waynesboro.

- 86% of placements were from General District Court and 14% were from Circuit Court
- 65% were male, 35% were female

Middle River Regional Jail Needs Assessment

- By assessed risk, 72% were low risk, 26% were medium risk and 2% were assessed to be high risk

<i>Blue Ridge Court Services</i>									
<i>Probation Outcomes</i>									
	FY-17			FY-18			FY-19		
Probation Outcomes	Misd	Felony	Total	Misd	Felony	Total	Misd	Felony	Total
Successful	543	75	618	478	61	539	534	78	612
Unsuccessful	--	--	--	--	--	--	219	55	274
New Felony	16	4	20	20	6	26	--	--	--
New Misdemeanant	25	2	27	27	2	29	--	--	--
Technical Violation	81	25	106	91	23	114	--	--	--
Total	665	106	771	616	92	708	753	133	886

- BRCS reported a 78% success rate in 2018
- In FY-18 there were 118,509 supervision days at a calculated cost of \$2.95 per day

State Probation and Parole District 39 and District 12

State Probation and Parole District #39, located at 30-A Water Street in Harrisonburg provides probation and parole services to State Responsible (SR) offenders residing in the Rockingham-Harrisonburg area. Probation and Parole District 25 is located at 500 Commerce Road in Staunton and provides similar services to offenders residing in Staunton, Augusta and Waynesboro.

In Virginia, a large array of programs, policies, procedures and practices associated with alternatives to incarceration exist. A summary overview is provided in the table below.

Middle River Regional Jail Needs Assessment

Law Enforcement Diversion	Instead of arrest, law enforcement may counsel, reprimand, handle administratively issue a summons, or refer.
Specialized Judicial Dockets and Courts	Specialized court dockets for managing special populations such as defendants with mental health needs, and specialized courts such as drug court, DUI court and mental health court exist throughout the State.
Release on Recognizance	Person brought before Virginia magistrates can be released on their promise to appear on unsupervised release; local authorities may implement policies broadening authority to implement.
Probation Diversion/Supervision	Person receives supervised or unsupervised probation in lieu of confinement; like pretrial diversion, is State funded, and exists in nearly all localities for sentenced local offenders.
Pretrial Release/Supervision	Exists in nearly all Virginia localities; State funded program that includes pretrial screening, release recommendations and supervision.
Day Reporting	Person required to appear at the reporting center to provide daily schedules; may include the requirement to attend programs and participate in activities; may include a number of structured requirements.
House Arrest	Person required to remain confined at home during specified times; may include GPS or electronic monitoring as well as day reporting.
Deferred Prosecution (Diversion)	Commonwealth's Attorney agrees to defer prosecution of charges if the person agrees to certain conditions.
Community Service	The court orders the person to provide unpaid time in lieu of confinement.
Electronic Monitoring	Tracking device attached to person to monitor movement.
Job Programs	A myriad of programs are intended to provide vocational training, placement, readiness or reentry.
Counseling	Also a component of many programs and takes many forms.
Mediation	As an alternative to court, a trained mediator helps to resolve disputes.
Restitution	Restitution programs require offenders to repay victims and/or the community through payment of fines or community service.
Intensive Supervision	This program/service takes many forms in Virginia; is aimed at providing a higher level of supervision and monitoring than regular supervision.
Work/Educational Release	This program exists in nearly all localities in some form and allows participants to work or pursue their education while reporting to jail at night.
Split Sentences	Also widespread in Virginia and alternatively called weekend or alternative sentences; allows person to maintain employment while typically serving a sentence on weekends.
Halfway House	Associated with State sentenced offenders; more structured than Day Reporting and less structured than jail or prison;

Section VI
Inmate Population Forecast

Inmate Population Forecast

- *Significant Finding:* Augusta, Waynesboro and Staunton MRRJ beds are projected increase from 610 in 2022, to 737 in 2029 – an average annual increase of 2.7% per year; the total Rockingham-Harrisburg inmate population is projected to increase from 646 in 2022, to 841 in 2029 – an average annual increase of 3.7% per year.
- *Significant Finding:* Based on the assumption that Rockingham-Harrisonburg will continue to house 300 of their inmate population locally and all others in MRRJ, the MRRJ planning forecast projects the Regional Jail population to increase from 956 in 2022, to 1,278 in 2029 – a total of 310 inmates, 44 per year and an average of 4.1% per year.

The following narrative presents the forecasting methodology and a planning forecast of the incarcerated inmate population for the Middle River Regional Jail through the year 2029, based on the assumption that existing policies, programs, procedures and administrative practices remain unchanged.

Also included is a description of the data upon which the forecast is based; the methodology used, and the outcomes of the forecasting procedures. Methods used to produce the forecast contained in this document are based on analyzing historical population trends and projecting those trends into the future. The assumption has been made that history provides a sound basis upon which to build planning estimates, and long-term trend associated with increasing and decreasing jail populations will largely continue in the future. The assumption has also been that policies, procedures, programs and administrative practices impacting population levels in the recent past will continue in the future. No assumption has been made that new policies, procedures, programs or administrative practices will reduce or increase the future jail population.

In general, jail populations increase or decline based on two key factors: (1) the number of persons admitted to jail, and (2) the amount of time they remain confined (length of stay). For example, if admissions decline and length of stay remains unchanged, capacity needs decrease. Historical jail population data reflect a set of conditions that existed during a given time. A cautionary note is that a number of things outside of mathematical changes in monthly jail population figures influence changes in jail populations. The sentencing practices, sentence guidelines, correctional policy, community attitudes towards non-incarceration alternatives, state and local responsibility definitions, for example, may be significantly different from the conditions experienced in the future.

Forecasting most future criminal justice populations is at best a difficult task and estimating future jail population levels is no exception. While forecasts that are too “high” can lead to costly and unnecessary construction projects, forecasts that are too “low” can result in poorly managed systems, overcrowding and facilities that are unsafe for offenders and jail personnel. The goal of the forecasting effort is to provide a reasonable estimate of future population levels for planning purposes based on documented and defensible methods that minimize the probability of either under-projecting or over-projecting.

Forecast Methodology: Middle River Regional Jail Population

A number of different forecast models were developed for projecting the future confined population. Forecasts were generated using Exponential Smoothing models (Holt and Winters) and a number of different ARIMA models (commonly called Box Jenkins models). Using available

diagnostic information, the three best models were selected and compared. In addition, a linear regression model was generated to provide a graphic long-term trend line. All models used to project the population are based upon the assumption that long term historical trends in population levels can be extrapolated into the future. The various models were developed using a software program titled Forecast Pro, developed by Business Forecast Systems.

A series of criteria were reviewed in selecting a method and then a specific model for forecasting the inmate population. These criteria included the Adjusted R-squared value, the Durbin-Watson and the BIC (Schwarz Information Criterion), with primary emphasis on the BIC.

Interpretation of Comparative Statistical Measures

Adjusted R-Square: *higher values are desired*; this statistic measures “how certain” we can be in making predictions with a model; the proportion of variability in the data set that is accounted for by a model.

MAD (Mean Absolute Deviation): *lower values are desired*; this statistic measures the size of error (the difference between the predicted and actual historical monthly population in the database); measures “how accurate” a model predicts historical data; unlike the forecast error, this statistic does not take into account positive (+) and negative (-) signs.

Durban-Watson (DW): *values close to 2.0 are desired*; this statistic measures problems with a model’s capacity to result in good projections (it measures serial correlation problems); as a rule of thumb values of less than 1.2, or greater than 3.7 indicate serial correlation issues; however, empirical research seems to indicate that making a model more complex in order to obtain a non-significant Durbin-Watson statistic does not result in increased forecasting accuracy.

Standardized BIC: *lower values are desired*; rewards goodness of fit to the historical data and penalizes model complexity; the model with a lower BIC will generally be the more accurate. For criminal justice data, the BIC is generally a more appropriate statistic upon which to base a selection, due to the less stable aspects in the criminal justice data series caused by one-time events and other factors.

To develop the overall MRRJ forecast, historical monthly inmate population figures were provided by Jail personnel. Two separate forecasts were completed and the results were summed to produce the planning projections: (1) a forecast of detainees from Augusta, Waynesboro and Staunton housed in MRRJ, and (2) a forecast of total Rockingham-Harrisonburg inmates housed both locally and the Regional Jail. An assumption was made that 300 inmates would continue to be held locally and the projected population over 300 would reside in MRRJ.

Forecast #1: Augusta, Staunton and Waynesboro Inmate Population

Forecast Database

The following table displays the historical monthly average populations for Augusta, Staunton and Waynesboro inmates housed in MRRJ. The forecast database for the Augusta, Staunton and Waynesboro inmate population is displayed below. This database was the only database used to

Middle River Regional Jail Needs Assessment

project the proportion of the total MRRJ inmate population from those localities. The number of inmates was compiled for each month between July 2006 – May 2019.

Middle River Regional Jail Monthly Inmate Population: Augusta, Staunton, Waynesboro Only													
Date	Fiscal Year												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jul	355	416	352	375	424	389	396	427	480	489	527	552	605
Aug	364	400	355	371	409	399	398	426	481	490	555	557	594
Sep	386	390	341	385	399	387	388	428	481	499	557	555	593
Oct	397	375	365	390	394	387	402	437	514	504	546	566	616
Nov	398	379	355	400	386	378	401	423	523	506	537	583	612
Dec	400	356	359	409	376	367	401	419	512	482	534	577	609
Jan	406	357	349	421	396	374	397	432	492	476	548	580	602
Feb	408	363	346	425	401	393	405	447	478	474	555	588.5	602
Mar	399	366	370	425	399	410	401	440	486	477	544	594	575
April	387	360	385	425	398	400	399	441	464	495	539	608	552
May	396	346	382	438	395	393	407	448	466	522	540	591	532
Jun	407	359	374	439	387	410	408	452	488	525	552	595	--
Ave	392	372	361	409	397	391	400	435	489	495	545	579	590
Min	355	346	341	371	376	367	388	419	464	474	527	552	532
Max	408	416	385	439	424	410	408	452	523	525	557	608	616
Change													
Percent	--	-5.0%	-3.0%	13.2%	-2.8%	-1.6%	2.5%	8.7%	12.4%	1.3%	10.0%	6.3%	2.0%
Number		-19.7	-11.2	47.5	-11.6	-6.4	9.7	34.8	53.8	6.2	49.6	34.4	11.3

Forecast Model Diagnostics

Diagnostic information associated with three ARIMA (Box Jenkins) models is presented below. These three models displayed superior diagnostic information and represent the three “best” models. For comparison purposes, information associated with a linear regression model is also presented. It should be stressed that the statistical properties associated with the regression model are extremely weak, and this model was not given any serious consideration. It is displayed in tables that follow merely to illustrate the long-term straight trend in the historical data.

Augusta, Staunton and Waynesboro Inmate Population: Forecast Model Options				
Statistic	Linear Regression	Box-Jenkins		
		Alternate 1	Alternate 2	Alternate 3
		(0,1,1)*(1,1,3)	(1,1,2)*(1,1,3)	(0,1,1)*(1,1,1)
Adj. R-Square	0.82	0.98	0.98	0.98
Durbin-Watson	0.12	1.94	1.99	2
Forecast Error	34.01	10.3	10.18	11.01
MAD	28.59	7.49	7.49	8.21
Standardized BIC	34.89	10.98	11.14	11.44

- Based on the comparative diagnostic statistics in the above table, the Box-Jenkins (0,1,1)*(1,1,3) model (Alternate 1) demonstrated the superior diagnostic statistics; this model demonstrated the highest R-Square value (tied with other Alternates), the second smallest forecast error, the smallest MAD value, as well as the smallest BIC statistic.
- The resulting forecasts for each of the models are presented in three-year intervals (for June of the year identified) in the table that follows.

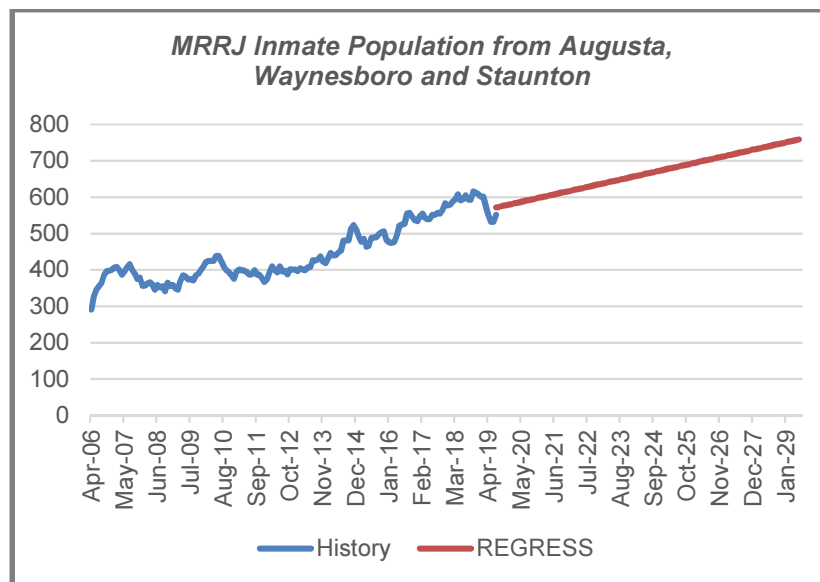
Comparison of Model Forecasts Projected Augusta, Staunton and Waynesboro Jail Population					
June Each Year	Linear Regression	Box-Jenkins			
		Alternate 1	Alternate 2	Alternate 3	Average
		(0,1,1)*(1,1,3)	(1,1,2)*(1,1,3)	(0,1,1)*(1,1,1)	
2020	589	548	547	561	552
2023	646	629	634	617	627
2026	702	683	689	674	682
2029	759	737	745	732	738

- In the projected year 2029, the average projected Jail population for the three models under consideration was 738, with the range from a low of 732 and a high of 745.
- Monthly projected inmate populations for Augusta, Staunton and Waynesboro are displayed in the table that follows for the years 2020 through 2029.

Middle River Regional Jail Needs Assessment

Selected Forecast

Middle River Regional Jail Forecast of Augusta, Waynesboro and Staunton Inmates Fiscal Year										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Jul	529	556	602	617	635	653	671	689	707	725
Aug	529	556	606	621	639	657	675	693	711	729
Sep	527	558	609	624	642	660	678	696	714	732
Oct	522	556	608	623	641	659	677	695	713	731
Nov	526	560	617	631	650	668	686	704	722	740
Dec	518	559	616	630	649	667	685	703	721	739
Jan	514	551	609	623	642	660	678	696	714	732
Feb	520	557	610	625	643	661	679	697	715	733
Mar	526	564	614	629	648	666	684	702	720	738
Apr	537	576	613	629	647	665	683	701	719	737
May	534	582	610	627	645	663	681	699	717	735
Jun	548	594	611	629	647	665	683	701	719	737
Average	528	564	610	626	644	662	680	698	716	734
Minimum	514	551	602	617	635	653	671	689	707	725
Maximum	548	594	617	631	650	668	686	704	722	740
Change										
Percent	--	6.9%	8.2%	2.5%	2.9%	2.8%	2.7%	2.6%	2.6%	2.5%
Number	--	37	46	15	18	18	18	18	18	18



Forecast #2: Rockingham and Harrisonburg Inmate Population

Forecast Database

- The number of inmates confined in both the MRRJ and the Rockingham facility was calculated for each month and summed together to produce a total Rockingham-Harrisonburg inmate population database. The number of inmates was compiled for each month between January 2010 – May 2019.

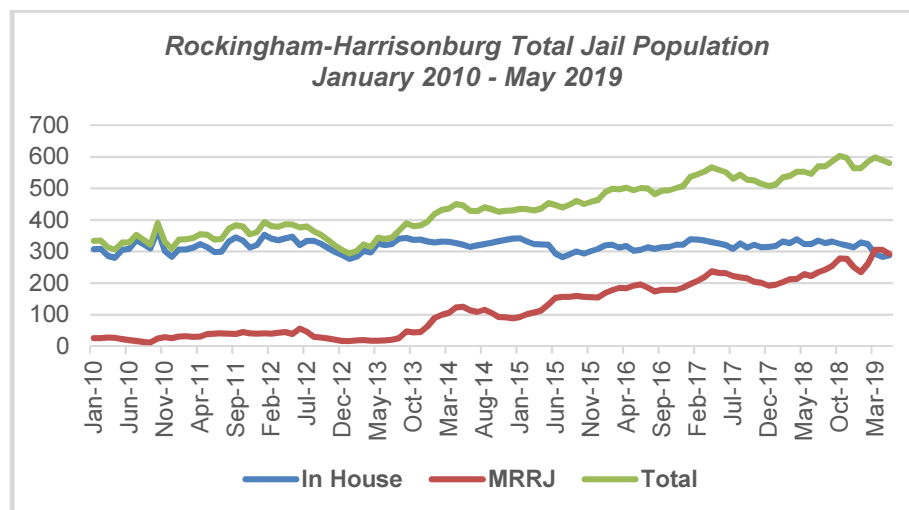
Rockingham-Harrisonburg Inmates Confined in the Local Jail

Monthly Inmate Population: Rockingham and Harrisonburg Inmates House in the Local Jail Only										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jan	308	307	353	277	329	342	319	339	318	329
Feb	309	307	341	283	332	332	322	338	332	324
Mar	286	313	336	303	331	323	312	335	327	292
Apr	280	324	342	297	327	323	318	330	339	284
May	306	314	347	326	322	322	302	326	324	288
Jun	309	298	321	321	315	294	306	320	324	277
Jul	336	299	334	323	320	283	314	308	335	--
Aug	324	332	334	341	324	291	308	326	327	--
Sep	310	345	325	343	328	300	314	313	331	--
Oct	366	335	312	337	333	294	315	321	325	--
Nov	302	313	298	338	337	301	322	314	320	--
Dec	283	321	288	332	342	308	322	315	314	--
Average	310	317	328	318	328	309	314	324	326	299
Maximum	366	345	353	343	342	342	322	339	339	329
Minimum	280	298	288	277	315	283	302	308	314	277
Change										
Number	--	7	10	-9	10	-19	5	9	3	-27
Percent		2.4%	3.2%	-2.8%	3.1%	-5.7%	1.6%	3.0%	0.8%	-8.4%

Middle River Regional Jail Needs Assessment

Rockingham-Harrisonburg Inmates Confined in the MRRJ

Monthly Inmate Population: Rockingham and Harrisonburg Inmates House In MRRJ										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jan	26	31	41	17	90	93	169	197	195	235
Feb	26	32	40	19	100	102	178	207	203	261
Mar	28	30	43	20	106	107	185	219	212.55	306
Apr	27	31	45	18	123	113	184	238	213	306
May	23	39	39	18	125	132	192	233	229	292
Jun	20	40	56	19	114	154	196	232	222	
Jul	17	41	46	21	109	157	186	222	235	
Aug	14	40	30	26	116	157	174	218	243	
Sep	12	39	28	47	106	160	179	215	255	
Oct	25	45	25	44	93	157	179	204	278	
Nov	29	41	21	45	92	156	179	201	277	
Dec	26	40	17	63	89	155	186	192	251	
Average	23	37	36	30	105	137	182	215	234	280
Maximum	29	45	56	63	125	160	196	238	278	306
Minimum	12	30	17	17	89	93	169	192	195	235
Change										
Number	--	15	-2	-6	76	32	45	33	20	46
Percent		64.5%	-4.0%	-17.2%	253.8%	30.1%	33.1%	17.9%	9.1%	19.4%



Middle River Regional Jail Needs Assessment

- The two tables above were combined to produce a combined database of the total Rockingham and Harrisonburg inmate population. The table that follows displays the final database.

Total Rockingham-Harrisonburg Database

<i>Monthly Inmate Population: Rockingham and Harrisonburg Inmates Housed in MRRJ and the Local Jail</i>										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jan	334	338	394	294	419	435	488	536	513	564
Feb	335	339	381	302	432	434	500	545	535	585
Mar	314	343	379	323	437	430	497	554	540	598
Apr	307	355	387	315	450	436	502	568	552	590
May	329	353	386	344	447	454	494	559	553	580
Jun	329	338	377	340	429	448	502	552	546	--
Jul	353	340	380	344	429	440	500	530	570	--
Aug	338	372	364	367	440	448	482	544	570	--
Sep	322	384	353	390	434	460	493	528	586	--
Oct	391	380	337	381	426	451	494	525	603	--
Nov	331	354	319	383	429	457	501	515	597	--
Dec	309	361	305	395	431	463	508	507	565	--
Average	333	355	364	348	433	446	497	539	561	583
Maximum	391	384	394	395	450	463	508	568	603	598
Minimum	307	338	305	294	419	430	482	507	513	564
Change										
Number	--	22	9	-15	85	13	50	42	22	22
Percent		6.6%	2.5%	-4.2%	24.5%	3.0%	11.3%	8.4%	4.1%	4.0%

Forecast Model Diagnostics

As with the previous forecast, diagnostic information associated with three ARIMA (Box Jenkins) models is presented below. These three models displayed superior diagnostic information and represent the three “best” models. Again, for comparison purposes, information associated with a linear regression model is also presented.

Rockingham and Harrisonburg Inmate Population: Forecast Model Options				
Statistic	Linear Regression	Box-Jenkins		
		Alternate 1	Alternate 2	Alternate 3
		(0,1,1)*(0,1,1)	(0,1,3)*(1,1,3)	(1,1,3)*(1,1,3)
Adj. R-Square	0.89	0.98	0.98	0.98
Durbin-Watson	0.3	1.7	1.86	1.88
Forecast Error	29.39	13.32	12.69	12.86
MAD	21.71	10.4	9.01	9.03
Standardized BIC	30.37	13.77	14.22	14.66

The resulting forecasts for each of the models are presented in three-year intervals (for June of the year identified) in the table that follows.

Comparison of Model Forecasts Projected Augusta, Staunton and Waynesboro Jail Population					
June Each Year	Linear Regression	Box-Jenkins			
		Alternate 1	Alternate 2	Alternate 3	Average
		(0,1,1)*(0,1,1)	(0,1,3)*(1,1,3)	(1,1,3)*(1,1,3)	
2020	613	602	579	579	587
2023	705	682	639	638	653
2026	797	762	698	695	718
2029	888	841	757	753	784

- In the projected year 2029, the average projected Jail population for the three models under consideration was 784, with the range from a low of 753 and a high of 841.
- Monthly projected inmate populations for Rockingham and Harrisonburg are displayed in the table that follows for the years 2020 through 2029.

Selected Forecast

- Based on the comparative diagnostic statistics in the above table, the Box-Jenkins 0,1,2)*(1,1,3) model (Alternate 1) and (0,1,3)*(1,1,3) model (Alternate 2) demonstrated the superior diagnostic statistics with respect to forecast errors, MAD statistics and Standardized BIC measures. Since the comparative

Middle River Regional Jail Needs Assessment

statistics were quite close and the Alternate 1 model had the highest BIC statistic, this model was selected as preferred.

- Monthly projected inmate populations are displayed in the table that follows for the years 2020 through 2029.

<i>Forecast of Total Rockingham-Harrisonburg Inmate Population</i>								
	<i>Fiscal Year</i>							
	2022	2023	2024	2025	2026	2027	2028	2029
Jul	633	659	686	712	739	766	792	819
Aug	636	663	690	716	743	769	796	822
Sep	641	667	694	720	747	774	800	827
Oct	645	672	698	725	752	778	805	831
Nov	636	663	689	716	742	769	796	822
Dec	629	655	682	708	735	761	788	815
Jan	642	668	695	721	748	775	801	828
Feb	652	678	705	731	758	785	811	838
Mar	656	683	709	736	762	789	816	842
Apr	660	687	713	740	766	793	820	846
May	661	688	714	741	768	794	821	847
Jun	655	682	709	735	762	788	815	841
Average	646	672	699	725	752	778	805	832
Minimum	629	655	682	708	735	761	788	815
Maximum	661	688	714	741	768	794	821	847
Change								
Percent	--	4.1%	4.0%	3.8%	3.7%	3.5%	3.4%	3.3%
Number	--	27	27	26	27	27	27	26

- The total Rockingham-Harrisonburg inmate population is projected to increase from 633 inmates at the beginning of FY-22, to 841 inmates at the end of FY-29; this represents an increase of 208 inmates and 32.9% growth.

Total MRRJ Inmate Population Planning Forecast

- Two separate forecasts were completed: one for Augusta, Waynesboro and Staunton inmates housed in MRRJ, and one for total Rockingham-Harrisonburg inmates housed in the local jail and MRRJ.
- An assumption was made that Rockingham-Harrisonburg will continue to house 300 locally, and all others will be in MRRJ.

Middle River Regional Jail Needs Assessment

- The two forecasts were summed to generate the MRRJ planning forecast.
- Augusta, Waynesboro and Staunton MRRJ beds are projected increase from 610 in 2022, to 737 in 2029 – an average annual increase of 2.7% per year
- The total Rockingham-Harrisburg inmate population is projected to increase from 646 in 2022, to 841 in 2029 – an average annual increase of 3.7% per year.

Middle River Regional Jail Forecast of MRRJ Total Population Assuming Assuming Rockingham-Harrisonburg Jail Holds 300 Inmates Fiscal Year								
	2022	2023	2024	2025	2026	2027	2028	2029
Jul	935	976	1,021	1,065	1,110	1,155	1,199	1,244
Aug	942	984	1,029	1,073	1,118	1,162	1,207	1,251
Sep	950	991	1,036	1,080	1,125	1,170	1,214	1,259
Oct	953	995	1,039	1,084	1,129	1,173	1,218	1,262
Nov	953	994	1,039	1,084	1,128	1,173	1,218	1,262
Dec	945	985	1,031	1,075	1,120	1,164	1,209	1,254
Jan	951	991	1,037	1,081	1,126	1,171	1,215	1,260
Feb	962	1,003	1,048	1,092	1,137	1,182	1,226	1,271
Mar	970	1,012	1,057	1,102	1,146	1,191	1,236	1,280
Apr	973	1,016	1,060	1,105	1,149	1,194	1,239	1,283
May	971	1,015	1,059	1,104	1,149	1,193	1,238	1,282
Jun	966	1,011	1,056	1,100	1,145	1,189	1,234	1,278
Average	956	998	1,043	1,087	1,132	1,176	1,221	1,266
Minimum	935	976	1,021	1,065	1,110	1,155	1,199	1,244
Maximum	973	1,016	1,060	1,105	1,149	1,194	1,239	1,283
Change								
Percent	--	4.4%	4.5%	4.3%	4.1%	3.9%	3.8%	3.6%
Number	--	42	45	44	45	45	45	44

- The final MRRJ planning forecast projects the MRRJ population to increase from 956 in 2022, to 1,278 in 2029 – a total of 310 inmates, 44 per year and an average of 4.1% per year.

B. GEOTECHNICAL ENGINEERING REPORT

**GEOTECHNICAL REPORTS
AND
SUBSURFACE ENVIRONMENTAL REPORTS
FOR
MIDDLE RIVER REGIONAL JAIL
VERONA, VIRGINIA**

SEPTEMBER 11, 2003

MIDDLE RIVER REGIONAL JAIL

ADVANCE SITEWORK PACKAGE

Enclosed please find a preliminary soils investigation report conducted by Atlantic Geotechnical Services and a more comprehensive soils investigation conducted by Zannino Engineering.

These reports are for information only and are not a part of the Contract Documents. The Architect, Construction Manager, and Owner assume no responsibility for actual subsurface conditions.

A Preliminary Subsurface Environmental Study was conducted at the site in February 2001. An additional Subsurface Environmental Study was done in January 2003, while the geotechnical core borings were being made on the jail site. A copy of these two (2) reports prepared by Draper Aden Associates are enclosed for information only and is not a part of the Contract Documents. The Architect, Construction Manager, and Owner assume no responsibility for actual subsurface conditions.

INDEX
MIDDLE RIVER REGIONAL JAIL
JUNE 20, 2003

Section I Geotechnical Report prepared by Zannino Engineering, Inc.
dated January 30, 2003.

Section II Preliminary Geotechnical Report prepared by Atlantic
Geotechnical Services, Inc. dated January 8, 2001.

Section III Preliminary Subsurface Environmental Report prepared by
Draper Aden Associates dated March 1, 2001.

Section IV Subsurface Environmental Report prepared by Draper Aden
Associates dated January 9, 2003.

SECTION I

RECEIVED



Zannino Engineering, Inc.
1650-A Mountain Road, Glen Allen, Virginia 23060
(804) 262-0299 Fax (804) 262-8479

JUN 16 2003

HEERY INTERNATIONAL, INC.
LANDOVER, MD

Zannino Engineering, Inc.
January 30, 2003

Mr. John McGehee
18 Government Center Lane
Verona, Virginia 24482

Regarding: Geotechnical Engineering Study
Proposed Middle River Regional Jail
Verona, Virginia

Dear Mr. McGehee:

We have completed our geotechnical engineering study for the proposed Middle River Regional Jail. Our services have been performed in accordance with our agreement dated December 23, 2002 and authorized on December 30, 2002.

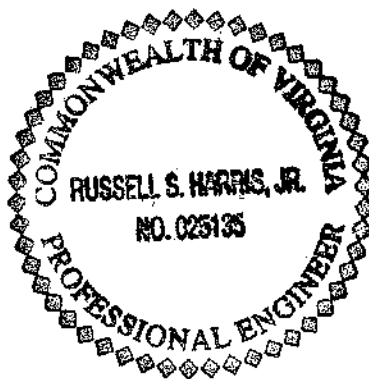
Included in this report is our analysis of the subsurface conditions encountered in test borings drilled at the site. We have performed soil laboratory testing on recovered samples from the test borings to assist in our analysis. Included in this report is an appendix, which contains the test boring logs and the results of the soil laboratory testing. This report addresses the scope of work outlined in your Request for Proposal dated December 5, 2002 which is part of our agreement.

We appreciate the opportunity of providing you our services for this project. Please contact us if you have questions concerning this report. We would also appreciate the opportunity to provide construction materials testing services during the construction phases of this project.

Sincerely:
Zannino Engineering, Inc.

Russell S. Harris, Jr., P.E.
Senior Engineer

Thomas L. Zannino P.E.
President



**GEOTECHNICAL ENGINEERING STUDY
PROPOSED MIDDLE RIVER REGIONAL JAIL
VERONA, VIRGINIA**

PREPARED FOR:

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PREPARED BY:

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1650-A MOUNTAIN ROAD
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FIGURES: Figure 1 – follows page 10

 Figure 2 – follows page 10

APPENDIX

 Project Location Plan

 Boring Location Plan

 Test Boring Logs

 Subsurface Profiles

 Soils Laboratory Data

 Stability Analyses

1.0 Executive Summary

The project site is generally underlain by stiff to hard, fine grained soils classifying Lean Clay (CL), Elastic Silt (MH), and Fat Clay (CH) with varying amounts of sand. These soils were derived from in-place weathering of the underlying shale rock.

The buildings may be supported on shallow spread footings bearing on suitable natural soils or compacted structural fill. An allowable soil bearing pressure of 3,000 psf may be used for footing design.

Perched water was encountered in some of the borings. Therefore, the contractor should anticipate some dewatering for this project. Dewatering and controlling surface water during site development should be the contractor's responsibility.

Cut slopes may be designed for grades not steeper than 2H:1V at some locations and may need to be flattened or the toe improved to maintain stability. Embankment fills consisting of compacted structural fill from on-site may be designed for grades no steeper than 3H:1V as proposed.

Auger refusal on rock was encountered in only 9 borings at depths of 14 to 32 ft below the ground surface. Based on the depth of refusal and the proposed grades, rock is not anticipated to be encountered during the earthwork phase of this project. However, we recommend a definition of rock be contained in the project specifications for the case where rock may be encountered.

Pavement design recommendations are included in this report for flexible and rigid pavement including light duty and heavy duty traffic.

Draper Aden was on site full time during the drilling to evaluate for the presence of petroleum contamination in the on site soils. No petroleum odors were encountered in any of the test borings.

2.0 Introduction

2.1 Project Description

Proposed for construction is a regional jail facility that includes a centrally located one-story, building referred to as the core building, a two-story women's housing facility north of the core building, a two-story men's housing facility east of the core building, a parking lot southwest of the core building, and a perimeter road outside of the buildings and parking lot. About 2/3 of the perimeter road will be paved and 1/3 will be unpaved and used as a fire road (Station 42+00 to Station 54+50). Proposed finished floor grades in the buildings are El 1275.5. A loading dock will be located at the northwest corner of the core building. Both braced and cantilever walls will be designed for the loading dock. Parking lot grades are proposed to vary between El 1271 to the east and El 1279 to the west. Perimeter road grades are proposed at El 1267 at the southeast side of the site to El 1284 at the west side of the site. A cooling tower will be located northeast of the core building on an embankment fill with proposed slopes of 3H:1V or flatter. The top of this embankment fill is at El 1283.5, and the toe of the slopes averages about El 1274. Two future buildings may be constructed, one just west of the women's facility, and the other just west of the core building.

The core building will require cuts over most of the building footprint, with up to 10 ft on the west side. The east side of the building will require some new fill, up to about 3 ft at the southeast corner. The women's facility will require cut, ranging from none at the northeast corner to about 7 ft at the southwest corner. The men's facility will be entirely on new fill with fill depths ranging from about 3 ft on the west side to 12 ft on the east side. The majority of the parking lot will require cut, with as much as 7 ft at the northwest area of the parking lot. Fills will also be required, generally in the southeast area of the parking lot with about 2 to 4 ft of new fill. We understand that most utilities are likely to be installed about 2 to 3 ft below final grades. Utilities will generally include plastic pipe and plastic conduit, with some metal lines for chiller water.

We understand that column footing loads will be vary from 150 to 200 kips, and wall loads will be about 4 to 5 kips per linear ft.

Project description details are based on the Boring Plan provided to us by Moseley Architects dated November 14, 2002, the Timmons Preliminary Grading Plan provided to us on January 23, 2003, and our phone conversation with Mr. Lindley Vaughan of Dunbar, Milby, Williams, Pittman, and Vaughan Consulting Structural Engineers.

2.2 Site Description

The approximate 21.5 acre site is southeast of the existing government center and east of the juvenile detention center now under construction. The site is open and grass covered. Several small creeks are located along the north, east, and south property boundaries. A tributary of the creek to the north cuts across the north end of the site. The site slopes gently downward to the east-southeast. Existing grades range from a high of about El 1300 along the west property line, to a low of about El 1257 at the northeast corner of the site. A potential borrow area is located at the northwest corner of the site, bounded between two small creeks.

A large stockpile of soil is present at the southwest corner of the site. We understand that this soil will be removed from the site prior to construction of the new facility.

Site description details are based on the plans provided to us by Moseley Architects dated November 14, 2002, the Preliminary Grading Plan by Timmons we received on January 23, 2003, and from our site visits.

3.0 Subsurface Exploration and Subsurface Conditions

3.1 Regional Geology

The site lies in the Valley and Ridge Geologic Province. The Valley and Ridge region is characterized by the presence of highly folded and faulted sedimentary rock, typically shales, limestones, and sandstones, and the residual soils above the rock derived from in place weathering. Typically associated with the limestone geology are solution features such as voids, caves, and underground streams. These features are not typically present in the shale rock geology. The Martinsburg shales and the Edinburg formations are present in the Verona area based on the Virginia Division of Mineral Resources Geologic Map (1967). These formations dip nearly vertical and strikes northeast-southwest.

3.2 Field Engineering

The subsurface conditions at this site were explored by drilling 74 test borings positioned in all areas of the site (refer to attached boring location plan). Generally, all borings were staked in the field by Funk Surveyors prior to drilling. On each boring stake the surveyor placed was the boring number and the ground surface elevation at the staked boring location. Our personnel located borings B-29A, B-101, B-101B, and B-102 by taping from other staked boring locations. Elevations for these boring logs are approximate and were scaled from the Moseley Boring Plan. Borings B-32, B-33, and B-78 through B-81 were not drilled due to the presence of the existing stockpile. The drilling footage not used for these borings was used to drill Borings B-101 and B102 which were considered critical in our analysis of cut slopes at the site. Water observation wells were installed in Borings B-101 and B-102.

The borings were extended to the planned depths unless prior refusal resulted in boring termination. The test borings were advanced and the borehole stabilized using conventional hollow stem rotary drilling equipment. Soil samples were taken through the hollow stem augers in undisturbed soil beneath the tip of the augers using a 2 inch outside diameter split-spoon sampler advanced by a 140 lb. weight falling 30 inches in accordance with the Standard Penetration Test (SPT) procedure (ASTM D 1586). The number of blows required for each 6 inches of penetration was recorded, and the number of blows required for the second and third 6-inch interval is referred to as the N-value developed in the Standard Penetration Test. Soil samples were taken from each split-spoon sampler and placed in a glass jar with air-tight lids. At most of the parking lot and perimeter road boring locations, and the potential borrow area at the north end of the site, bulk samples were obtained. These bulk samples generally included the auger cuttings from the upper 10 ft of the boring. During the drilling operation we prepared field test boring logs based on the visual descriptions of

the soil encountered during the drilling operation. Noted on these logs is the approximate depth of each stratum change, recorded blow counts and groundwater, if encountered, during drilling. Soil samples were visually classified according to the Unified Soils Classification System (USCS) criteria. Test boring logs are included in the appendix of this report.

3.3 Subsurface Profile

Topsoil was encountered at the ground surface and extended to depths of 0.3 to 1.0 ft below the ground surface, but was generally about 0.5 ft. Based on the boring and soils laboratory data, soils encountered below the topsoil are generally medium stiff to hard, clays and silts. Below these fine grained soils is weathered shale. For purposes of this geotechnical engineering study, we have defined weathered shale as stratified, dense material with an N value of less than 50 blows per inch of penetration. Also for purposes of this report, we have defined rock as material in which we encountered auger refusal. Sampler refusal, defined as material with blow counts of 50 blows or more per inch of penetration, occurred in about 22 of the borings at depths of about 9 to 32 ft, or El 1250.7 to 1277.4. Auger refusal occurred in 10 of the borings at depths of about 14 to 32 ft, or El 1261.8 to El 1273.8.

Two profiles taken across the site are included in the appendix of the this report. These profiles indicate the depth of existing fill where present, of natural soils, of weathered shale, and of rock, where encountered. Based on these profiles the ground surface generally mimics the weathered rock surface, with less soil above weathered rock to the eastern side of the site.

3.4 Ground Water

Groundwater was encountered during drilling at some locations. The groundwater was encountered from 4 to 23 ft below the ground surface, El 1255.7 (Boring B-12) to El 1286.5 (Boring B-101B). Groundwater, on average, was encountered about 15 ft below the existing ground surface. Two water observation wells were installed in Borings B-101B and B-102 at the southwest area of the site near the perimeter road. Our most recent water level data indicates the water table at El 1286.5 (B-101B) and El 1283.5 (B-102).

Many of the borings encountered zones in the natural soil where red, gray, yellow and brown mottling was observed. This mottling may indicate potential perched or seasonal water levels. Some of the shallower water encountered during drilling may represent perched water. Perched water may occur when an underlying layer of soil is less permeable than the one above it. Long term water level readings were not obtained in most borings since borings were backfilled on a daily basis

as required by our contract. The position of the ground water table or perched water condition is anticipated to fluctuate depending on variability in the amount of precipitation, surface runoff, evaporation, and similar factors.

3.5 Soils Laboratory Testing

Upon completion of the drilling operation all soil samples were returned to our soil mechanics laboratory, where the Geotechnical Engineer visually examined them. Selected samples were tested to evaluate the physical and engineering properties of the soil. Laboratory testing included California Bearing Ratio, Natural Moisture Content, Grain Size Analysis, and Atterberg Limits. The soils laboratory test results are in the appendix of this report.

In addition to compaction and index testing, we have also performed pH (ASTM D4972) testing and resistivity testing (ASTM G57) on selected samples. The pH testing requires that the soils be tested for pH using both calcium chloride solution and distilled water. The resistivity testing was performed on selected samples tested in the soils laboratory. The results are summarized below.

Summary of pH Test Results

Boring	Depth (ft)	pH (CaCl solution)	pH (distilled water)
B-43	13-15	6.8	7.4
B-51	4-6	7.1	7.3
B-52	4-6	7.1	6.8
B-59	0-2	6.1	5.4
B-60	0-2	4.9	4.0
B-64	2-4	6.0	5.9
B-65	0-2	6.4	6.0
B-77	6-8	6.6	6.6

Summary of Resistivity Testing

Boring	Depth (ft)	Resistivity (ohms-cm)
B-14	0-5	10,000
B-31	0-5	1,480
B-48	2-6	7,100

4.0 Subsurface Conditions

4.1 Earthwork

Based on the proposed construction, we recommend the topsoil be stripped to a depth of ½ ft below the existing ground surface. Existing fill was only encountered at Borings B-10, B-23, and B-25 to depths of 2 to 6 ft. Although no deleterious materials were observed in the fill soils from these three borings, we recommend that the fill in the area of these borings be further evaluated by excavating test pits extending to natural soils.

During grading, and during foundation and utility installation we do not anticipate rock excavation. However, we recommend that rock excavation be defined in the project specifications in the event that rock is encountered. A sample definition of rock is provided below:

“Rock excavation for trenches and pits includes removal and disposal of materials and obstructions encountered that cannot be excavated with a track-mounted power excavator, equivalent to a Caterpillar Model No. 215C LC, rated not less than 115 HP flywheel power and 32,000-pound drawbar pull equipped with a short stick and a 42-inch wide, short tip radius rock bucket rated at 0.81 cubic yard (heaped) capacity. Trenches in excess of 10 ft in width and pits in excess of 30 ft in either length or width are classified as open excavation.”

“Rock excavation in open excavations includes removal and disposal of materials and obstructions that cannot be dislodged and excavated with modern, track-mounted, heavy-duty excavating equipment without drilling or blasting. Rock excavation equipment is defined as Caterpillar Model No. 973 or equivalent track-mounted loader, rated at not less than 210 HP flywheel power and developing minimum of 45,000-pound breakout force (measured in accordance with SAE J732). Typical materials classified as rock are boulders 1 cubic yard or more in volume, solid rock, rock in ledges, and rock-hard cementitious deposits. Intermittent drilling or blasting performed to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.”

Since groundwater was encountered in many of the borings, and at shallow depths in some borings, and since the on site soils are sensitive to moisture content, we recommend that earthwork be performed during the drier times of the year, late spring through early fall. Working during the drier times of the year will also permit the contractor to scarify and dry the soil excavated for use as borrow fill. Based on the laboratory analyses, most of the soils will require drying before compacting. Three of the bulk samples tested in our laboratory were about 1% over the optimum moisture content, three were 3% to 5% over optimum, one was 8% over optimum, and one was 15%

over optimum. The contractor should have pricing in his contract for moisture conditioning (drying or adding water) the on site borrow soils. The contractor should also anticipate the need for interceptor and drainage ditches to control the flow of surface water and near surface runoff and seepage.

All proposed fill areas including the building and pavement areas should be subjected to proofrolling under the observation of the Geotechnical Engineer. Proofrolling should occur with either a loaded tandem dump truck, loaded pan, or a minimum 20-ton roller by making several overlapping passes with the equipment and observing if any pumping or yielding occurs. Any areas that yield excessively during the proof rolling operation will require some means of stabilization prior to the addition of fill. If the yielding is due to unsuitable soils, topsoil or foreign material, these areas will need to be undercut and replaced with compacted fill. The Geotechnical Engineer should be on site to recommend the depths and limits of any undercut needed. Suitable fill should be placed and compacted to a minimum of 95% of maximum density based on the Standard Proctor test per ASTM D 698. Any material used as fill shall conform to the standards set below.

Suitable soils for compacted structural fill shall consist of GW, GP, GM, GC, SW, SP, SM, SC, ML, MH, CH and CL. Compacted structural fill used to construct the embankment fill for the cooling tower should have a Plasticity Index less than 30. On site borrow soils are expected to meet the above criteria. The soil to be used as fill should not contain organic materials or rock pieces greater than 4 inches in any dimension. The fill should be placed in maximum loose lifts of 8 inches and compacted to a minimum of 95% of maximum dry density per ASTM D698 for all pavement areas within two feet of design subgrade, 95% for floor slabs and foundations, 95% for embankment fills, and 90% for all landscaped areas. The Geotechnical Engineer should monitor the compaction operation on a full-time basis. Spot testing (i.e., not full-time) does not provide adequate data to fully assess compliance with the project plans and specifications. Soil density tests should be taken at the rate of at least 1 test per every 2500 square feet for each lift of fill placed within the building area and embankment fills, and every 10,000 square feet in paved areas. Since most soils are fine textured, cohesive soils, the most desirable compaction equipment is a sheepfoot roller. Weathered shale will receive compaction with a heavy, high contact pressure sheepfoot roller to break down the material during compaction.

We do not anticipate major ground water problems during construction in the area of the buildings based on the ground water data we have obtained. However, perched ground water was encountered in some borings. In addition ground water is present above proposed elevations on the west side of the site along the perimeter road from about Stations 58+00 to Station 65+00. During construction the contractor should be responsible for controlling ground water and surface water at the site.

Recommendations for addressing the perched ground water and ground water are included in the appropriate sections that follow in this report.

4.2 Foundations

Based on the subsurface conditions at this site, we recommend conventional spread footings bearing on either firm natural soils or compacted structural fill, with an allowable bearing pressure of 3,000 psf. The exterior footings should extend down a minimum of 3 ft below final exterior grade to the bottom of footing, which is below the frost depth for this area. Interior footings may be placed at nominal grades, preferably a minimum of 18 inches below finished floor. At some locations, the footings may need to be undercut to encounter firm bearing conditions. Where the footings are undercut to remove unsuitable soils, the footing excavation shall be widened 1 ft for every additional foot of depth below the bottom of footing. Exterior footings requiring undercut should be backfilled with existing on site soils as compacted structural fill, or with flowable fill. Interior footings requiring undercut may be backfilled with either compacted structural fill, VDOT No. 57 stone, or flowable fill. If flowable fill is used as backfill, no lateral overexcavation with depth is needed. The Geotechnical Engineer shall evaluate the soil bearing capacity during footing construction. Footings should be neat formed so that concrete completely fills the foundation excavation and prevents future water infiltration. Assuming uniform loading and linear elastic settlement of the buildings, we estimate total settlement of less than 1 inch, and differential settlement of less than 1/2 inch between similar loads.

Where ground water is encountered during foundation excavation, foundation drains may be required. Foundation drains may consist of perforated PVC surrounded by at least 4 inches of VDOT No. 57 open graded aggregate and a non-woven filter fabric such as Mirafi 140N or equivalent. These foundation drains should be installed along side of the foundation and daylighted or connected to the proposed storm water piping. The only area we anticipate a potential for shallow ground water to occur during construction is along the northwest corner and the west side of the core building.

We have evaluated the Seismic Site Coefficient for this site according to BOCA 1612.3.1. We recommend an S value of 1.0 be used for seismic design.

4.3 Floor Slabs

Floor slabs on grade may be supported on existing natural soils provided the existing natural soil subgrades are deemed suitable after proofrolling, or on compacted structural fill. Subgrades in cut

sections should be scarified to a depth of at least 6 inches, moisture conditioned if needed, and compacted. Some recompaction of the existing subgrade soils may be required in the slab areas after disturbance from site grading and underground utility installation. Utility backfill should be placed as compacted structural fill since the ground floors will be constructed slab on grade. Compacted structural fill placed to support floor slabs should be compacted to 95% of maximum dry density (ASTM D698). A modulus of subgrade reaction, k , of 125 pci, may be used to design floor slabs. A 4-inch layer of free draining granular material such as VDOT #57 crushed stone should underlie the concrete slab. A plastic vapor barrier should also be placed below the slab to prevent moisture contact with the concrete floor.

4.4 Earth Pressures for Loading Dock Walls

Using on site soils, cantilever retaining walls should be designed for an active equivalent fluid pressure of $45H$ and a passive equivalent fluid pressure of $280H$ where H is the height of the wall above the foundation subgrade elevation (Refer to Figure 1). Where applicable, surcharge loads should be considered by using a rectangular earth pressure distribution. The surcharge pressure should be obtained by multiplying the surcharge pressure by 0.39. Cantilevered walls may be designed to resist sliding based on an ultimate frictional resistance factor between the concrete base and the soil of 0.30. A factor of safety of 2.0 should be used for sliding and overturning resistance. Hydrostatic pressure is not considered since drainage behind the wall is recommended. Drainage should consist of placing geocomposite drainage panels against the wall for its entire height. Subdrains should be located on top of the wall foundations and should consist of 4-inch slotted, corrugated plastic tubing, surrounded by at least 4 inches of VDOT No. 78 aggregate. This aggregate should be wrapped in drainage geotextile consisting of Mirafi 140 N or equivalent. Subdrains should be connected to convenient sump of storm sewer, or daylighted.

Using on site soils, braced walls should be designed for an at rest equivalent fluid pressure of $50H$ where H is the height of the wall above the foundation subgrade elevation (Refer to Figure 2). Surcharge pressures should be obtained by multiplying the surcharge pressure by 0.45. As for the cantilever walls, drainage behind the wall was assumed and should consist of a geocomposite drainage panel and foundation subdrain as described above.

As an alternate to subdrains, weepholes may be installed at the base of the walls, on 10 ft centers. The weepholes should consist of 3-inch diameter holes in the walls. A filter consisting of one cubic foot of VDOT No. 78 open graded aggregate wrapped in a geotextile such as Mirafi 140N or equivalent should be placed behind the weepholes. This alternative assumes that drainage from the

FIGURE 1
EARTH PRESSURES FOR CANTILEVER
RETAINING WALLS

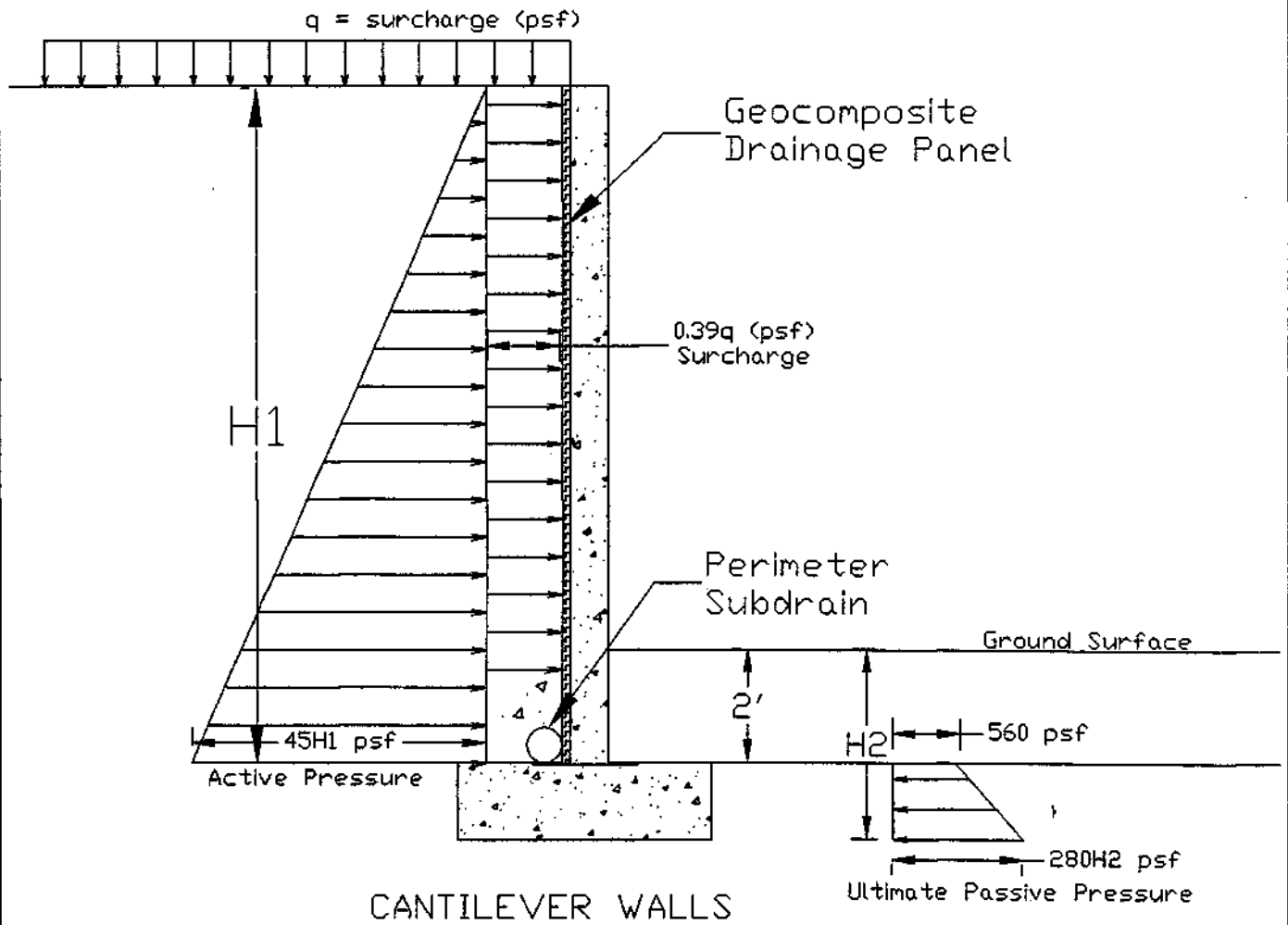
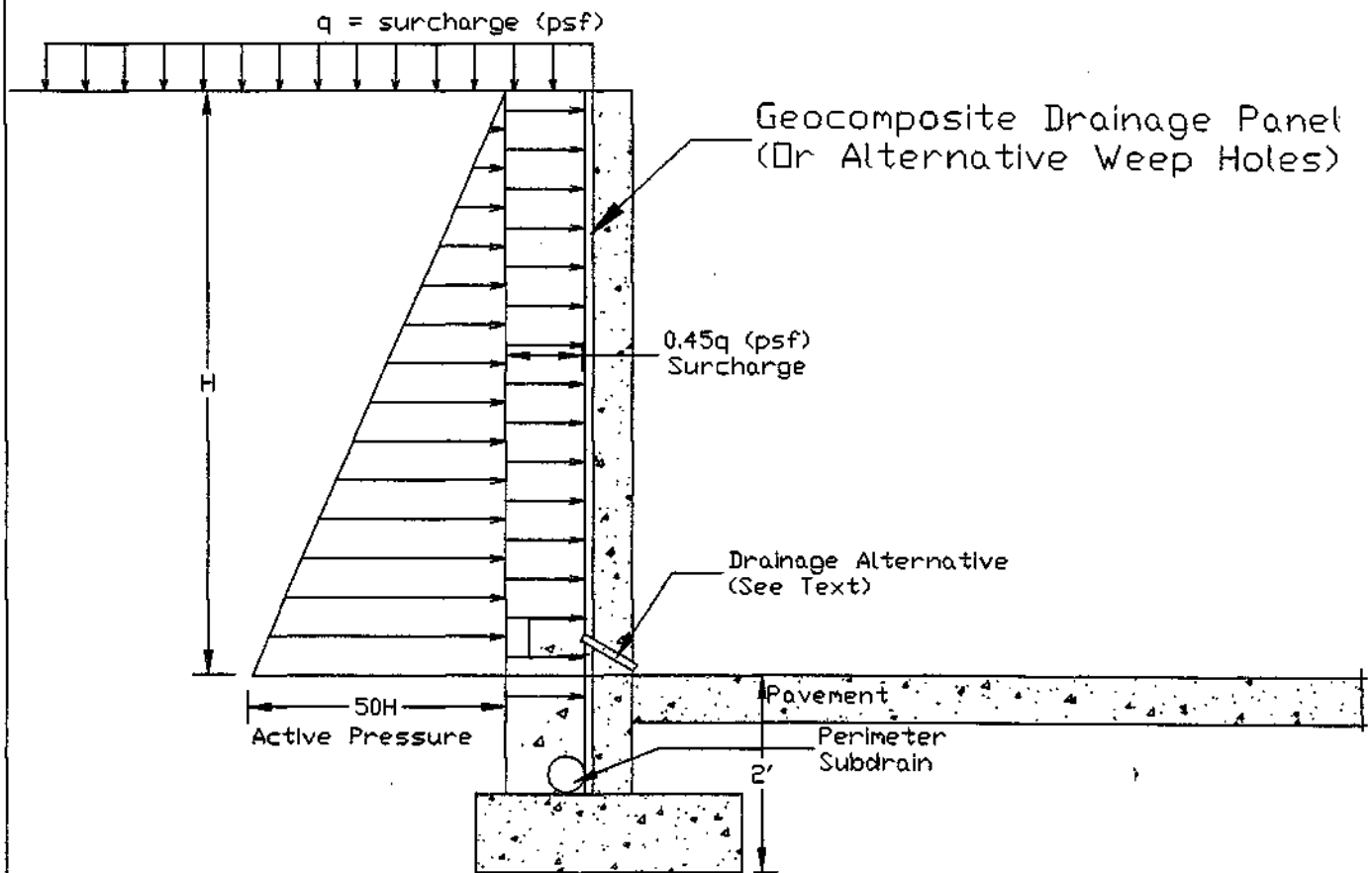


FIGURE 2
EARTH PRESSURES FOR BRACED
RETAINING WALLS



RESTRAINED WALLS

weepholes will be directed away from the base of the wall. Many loading dock designs will not accommodate positive drainage away from the base of the walls.

Backfill behind loading dock walls should be compacted to 95 percent of maximum dry density per ASTM D-698 (Standard Proctor). Backfill should be placed in maximum 8-inch thick, loose lifts. Only light, hand operated equipment should be used within 10 ft of the walls.

4.5 Pavement Design

We have assumed for our pavement design analysis a traffic count of 400 vehicles per day for light duty pavement and greater than 600 vehicles per day for heavy duty pavement, both with less than 5 percent heavy trucks. Our pavement recommendations are based on a laboratory CBR value of 5.4 using the Virginia Department of Transportation "Pavement Design Guide for subdivision and Secondary Roads in Virginia" 1996, revised 2000. Based on our analysis we recommend the following minimum flexible pavement sections:

Light Duty Pavement

2.0 inches SM-9.5A

8.0 inches VDOT 21B

Heavy Duty Pavement

1.5 inches SM-9.5A

3.0 inches BM-25.0

6.0 inches VDOT 21B

Light Duty pavement is recommended in the parking lot southeast of the core building. Heavy duty pavement is recommended for the paved portion of the perimeter road, the loading dock area (unless rigid pavement is selected), and in the main drive lane of the parking lot. We have considered the main drive lane to begin at about Station 62+50 extending east to the core building, then southwest to Station 35+25.

We have also been requested to address the unpaved, proposed gravel road section of the perimeter road from Stations 42+50 to 54+50. In this area we recommend 8 inches of VDOT No. 21B dense-graded aggregate. This aggregate should be placed and compacted on suitable subgrades as described in Section 4.1 of this report. After the VDOT No. 21 B is compacted, we recommend proofrolling as an additional check to evaluate whether any soft areas have developed as a result of compaction efforts.

Thicknesses shown above are the minimum thicknesses required as measured after compaction. The VDOT 21B dense graded aggregate should be compacted to 95 percent of the maximum dry density

per ASTM D698. Utility excavations within pavement and gravel areas should be backfilled with compacted structural fill and compacted to 95% of the maximum dry density per ASTM D698.

Most soils will be moisture sensitive and will require good crown of the soil subgrade and drainage features in the roadway cross section. Areas of cut will require underdrain pipe in areas identified as having perched water or ground water encountered during drilling. Additional areas for underdrain pipe may need to be identified in the field by the Geotechnical Engineer.

Prior to placement of base course materials, the base course subgrade should be proofrolled as described in Section 4.1 of this report. If after proofrolling, undercutting is required, the undercut materials may be replaced with compacted structural fill meeting the requirements described in Section 4.1 of this report. Prior to paving, the compacted VDOT No. 21B should also be proofrolled. Based on proofrolling observations, any areas deemed unsuitable should be either recompacted or removed and replaced, and proofrolled again. If previously proofrolled areas that were deemed acceptable by the Geotechnical Engineer become disturbed by subsequent on site activities, these areas should be repaired and re-evaluated at no cost to the owner.

If dumpster pads or compactor pads are proposed, light duty pavement should be thickened to 4 inches at the edge of these pads. Thickening the approach to these pads should be a gradual transition beginning about 10 ft from the pads. The pads should be designed using a subgrade modulus of 125 pci.

Rigid pavement design recommendations apply to the loading dock area. We recommend a rigid pavement thickness of 8 inches placed on 6 inches of compacted VDOT No. 21 B to accommodate heavy trucks in this area. This pavement should be placed according to VDOT Standard PR-2, found in the VDOT Road and Bridge Standards, Volume 1, 2001.

4.6 Slope Stability for Cuts and Embankment Fills

We have analyzed the stability of the proposed grades of the embankment fill in the area of the cooling tower, and the cut slopes adjacent to the perimeter road. The parameters we used in our analyses are shown on the graphic output and were selected based on soil boring and laboratory test data. Both total and effective stress analyses were performed. Graphic output is included in the appendix of this report.

Embankment Fill for Cooling Tower

The proposed grades for the cooling tower indicate the crest of the embankment fill at about El 1283.5. The toe of the embankment fill is at about El 1274. The steepest grades appear to be about 3H:1V. Based on these grades, and using the properties we anticipate for borrow fill placed in the embankment, the embankment factor of safety for global stability is greater than 10 for the total stress condition, and 1.9 for the effective stress condition, which are considered adequate.

Cut Slopes at Perimeter Road

The proposed grades for the cut slopes at the perimeter road are 2H:1V. We have analyzed two sections, one at about Station 58+85, the other at about Station 61+30. Based on these grades, and using the properties we anticipate for the existing soils, the global stability of the cut slopes is as follows. At Station 58+85, the factor of safety is 7.3 for the total stress condition which is considered adequate. The factor of safety is 1.17 for the effective stress condition which is considered inadequate. With this inadequate factor of safety, the slope may be cut at 2H:1V but is likely to require periodic, maybe frequent, maintenance unless stabilized by other means.

At Station 61+30, the factor of safety for global stability is 6.8 for the total stress condition which is considered adequate. The factor of safety for global stability is 0.84 for the effective stress condition which is considered inadequate. This low factor of safety is largely attributed to the ground water table that emerges from the cut slope above the toe. We also performed an analysis to evaluate the increase in factor of safety by lowering the water table. This resulted in a factor of safety of 1.03.

These factors of safety for the effective stress analysis for both cut slope sections that we analyzed is inadequate and shows that the slope should be stabilized, and that lowering the water table alone is not anticipated to provide adequate stability.

Options for stabilizing the slopes include flattening the slopes, geogrid wrap-faced slopes, segmental block retaining walls with geogrid reinforced soil behind the facing blocks, or overexcavation beyond the proposed grades and replacing these excavated soils with compacted structural fill. Any option chosen will require drainage features such as chimney drains and drainage blankets to reduce the impact on stability due to the existing ground water table. Other options such as soil nails or concrete retaining walls are likely to cost more than flattening the slopes, geogrid reinforced slopes, geogrid reinforced walls, or removal and replacement of soils. Analyses for stabilized slope options is not included in the scope of services provided under our existing contract.

5.0 Limitations

- This report has been prepared for use by the Middle River Regional Authority and their agents to aid in the design of this project. The report has been prepared in accordance with generally acceptable geotechnical engineering practices and no other warranties, either expressed or implied, are made.
- Recommendations presented in this report are based on data obtained from test borings drilled at the locations shown on the boring location drawing. Variations occurring between borings may not become evident until or during construction. If significant variations are noted, we should be contacted so that field conditions can be examined and applicable recommendations revised, if necessary.
- If changes are made in the nature, design or location of the structures or loads planned, or the if the anticipated traffic volume is greater than that assumed for our analysis, the conclusions and recommendations presented herein should not be considered valid unless we have reviewed the changes and modified or verified the conclusions and recommendations.

We would like the opportunity to review the project plans and specifications prior to construction and can provide our comments on the plans based on this review as an additional service.

APPENDIX

PROJECT LOCATION PLAN (1)

BORING LOCATION PLAN (2)

FIELD NOTES FOR BORING LOGS (1)

TEST BORING LOGS (75)

SUBSURFACE PROFILES (1)

SOILS LABORATORY DATA (29)

STABILITY ANALYSES (7)

FIELD NOTES FOR BORING LOGS

Density for Non-Cohesive Soils

4 blows/ft or less-----Very Loose
5 to 10 blows/ft-----Loose
11 to 30 blows/ft-----Medium Dense
31 to 50 blows/ft-----Dense
51 blows/ft or more---Very Dense

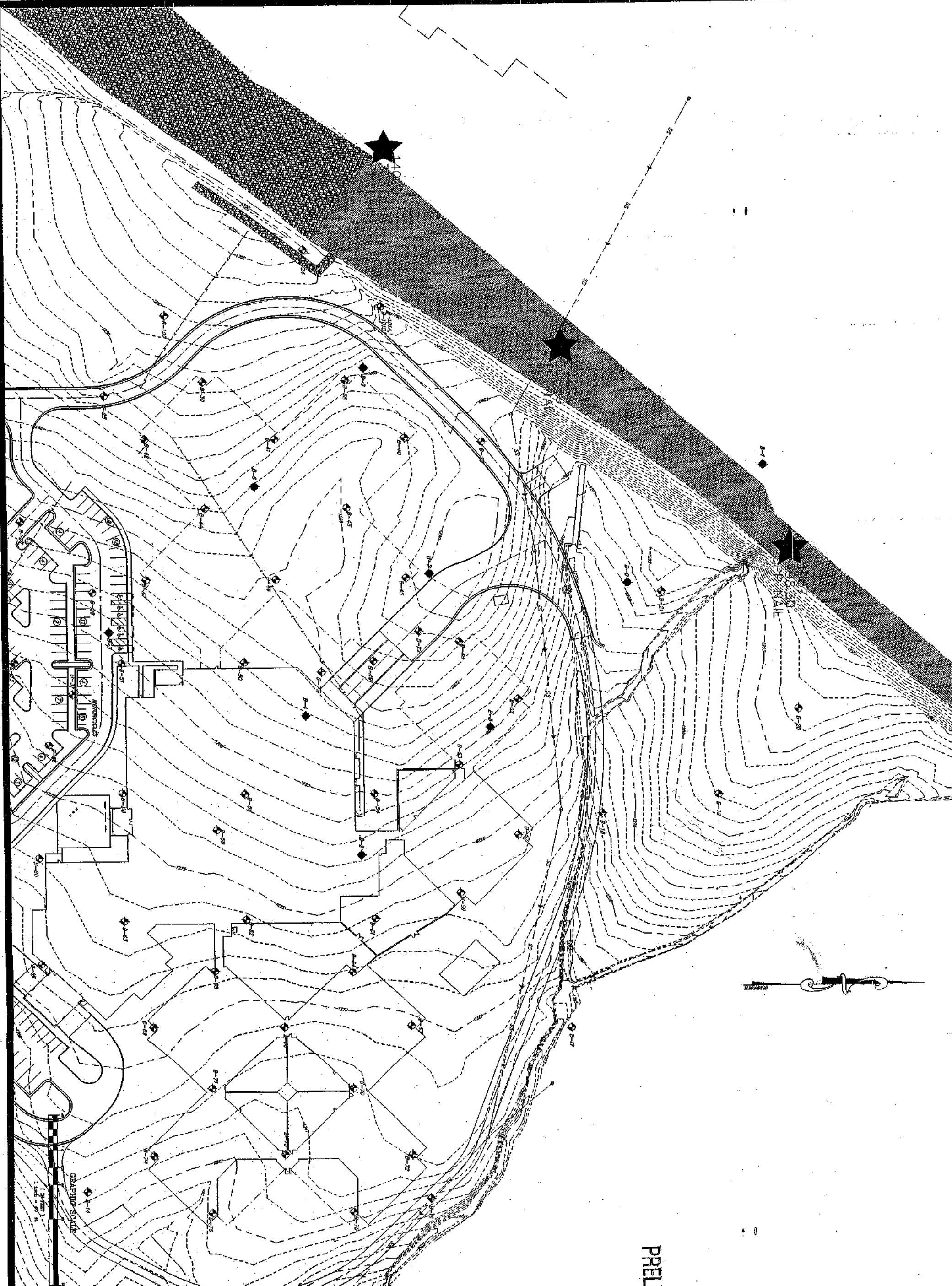
Consistency for Cohesive Soils

1 blow/ft-----Very Soft
2 to 4 blows/ft-----Soft
5 to 8 blows/ft-----Medium Stiff
9 to 15 blows/ft-----Stiff
16 to 30 blows/ft-----Very Stiff
31 blows/ft or more---Hard

do= same as above

Stratum Break-Horizontal lines are approximating of interpreted stratum changes as observed in the filed.

Ground Water- Observations were made during drilling unless water observation wells were installed.



B1.1

BORING
PLAN

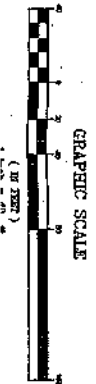
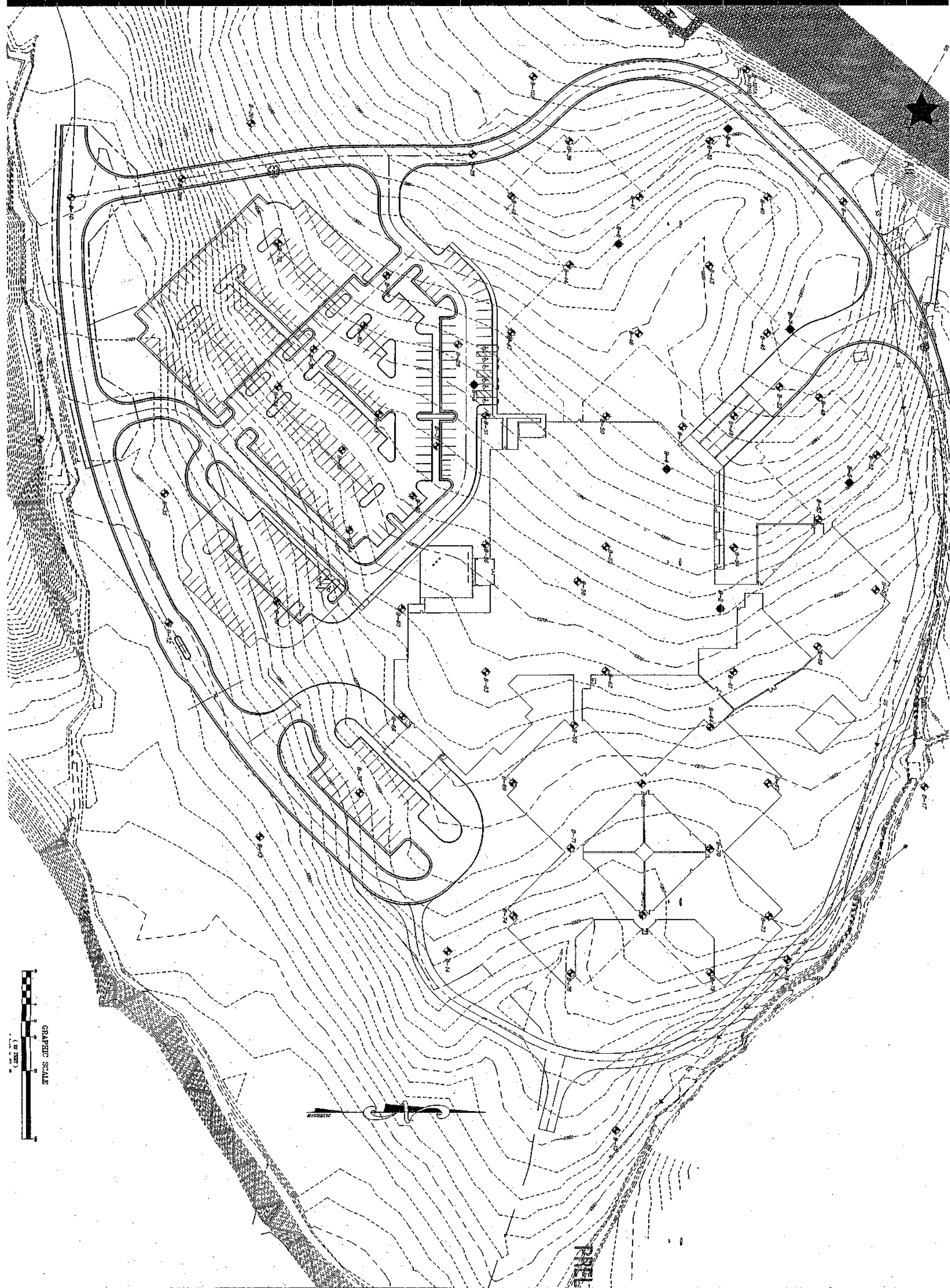
PROJECT NO.
4200000
DATE
30 JANUARY 2003
REVISIONS
DRAWN BY
C. STROCK
REVIEWED BY
S.O.

MIDDLE RIVER
REGIONAL JAIL
AUGUSTA COUNTY
VIRGINIA

TIMMONS GROUP
ARCHITECTS
1000 COMMONWEALTH DRIVE
SUITE 200
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PRELIMINARY
DESIGN

MOSELEY ARCHITECTS
A PROFESSIONAL CORPORATION
601 SOUTH LAKE BOULEVARD, RICHMOND, VIRGINIA 23238
PHONE (804) 794-7656 FAX (804) 379-6660



PROJECT NO: 4200009
 DATE: 30 JANUARY 2003
 REVISIONS:
 DRAWN BY: C. STROCK
 REVIEWED BY: S.O.
 NOT FOR CONSTRUCTION

MIDDLE RIVER REGIONAL JAIL

AUGUSTA COUNTY
 VIRGINIA

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 MOSELEYARCHITECTS.COM

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-10		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Sonny				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1269.8	Topsoil	0.4	0	5-5-8-7	2.5	Probable fill
1269.4	Stiff, elastic silt, MH, fill moist orange, brown and black		2	13-20-14-18	1.5	
	Do, moist orange brown below 2 ft		4	4-5-10-8	3.25	
	Do, stiff below 4 ft					
1263.8	Stiff, elastic silt, MH, moist brown and gray	6.0	6	2-5-6-9	3.25	Natural soils
1260.0	Do, hard below 8 ft, contains weathered quartz and shale fragments	9.8	8	4-15-28-50/3"		Weathered shale 9.5 to 9.8 ft
	BTA 9.8 ft					

Water Level Observations: Encountered Dry FT
 Completion 9.8 FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 7.7 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-11		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 8 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1263.9	Topsoil	0.3	0	2-3-3-3	2.5	Drilled near creek
1263.6	Medium stiff, elastic silt, MH, moist brown and yellow Do, soft, contains weathered quartz fragments, moist brown below 2 ft	4.0	2	3-2-2-4	1.0	Natural Soils
1259.9	Stiff, silt, ML, moist brown and gray	6.0	4	3-2-10-22	3.5	
1257.9	Weathered shale, moist black	8.3	6	50/2"		Weathered shale
1255.6	BTA 8.3 ft		8	50/3"		

Water Level Observations: Encountered Dry FT
 Completion Dry FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 7 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-12		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kim, EDAC				INSPECTOR: Wilton		

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1259.3	Topsoil	0.4	0	4-4-6		Natural Soils
	Stiff silt, ML, moist, brown		2	4-5-7	4.5	
	Do, gray and brown below 3.5 ft		4	3-4-6		
	Do, wet at 4 ft		6	2-2-3		
	Do, medium stiff, black below 6 ft		8	2-3-50/1"		
1250.6	Do, hard below 9 ft	9.1				Sampler Refusal
	BTA 9.1 ft					

Water Level Observations: Encountered 4.0 FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 7.8 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-13		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 8 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin, Fishburne				INSPECTOR: C. Brown		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1258.1	Topsoil	0.8	0	5-6-6-7	2.0	Natural Soils
1257.3	Stiff silt with sand, ML, moist, strong brown, yellow, and black Do, hard, stratified silt, dry, brown, below 2 ft		2	10-16-24-30	3.5	
1252.6	Weathered shale, dry, black	5.5	4	21-20-30-50/4"		
			6	50/3"		Weathered Shale
1249.8	BTA 8.3 ft	8.3	8	50/3"		

Water Level Observations: Encountered None FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 6.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-14		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin, Fishburne				INSPECTOR: C. Brown		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1266.6	Topsoil	0.5	0	2-3-5-6	2.0	Natural Soils
1266.1	Medium stiff silt, ML, moist, strong brown and yellow		2	7-6-10-12		
	Do, very stiff, stratified silt, brown and gray below 2 ft		4	9-10-9-9		
	Do, hard, brown below 6 ft	7.3	6	8-25-50/4"		
1259.3	Weathered shale, dry gray	8.9	8	45-50/5"		Weathered Shale
1257.7	BTA 8.9 ft					

Water Level Observations: Encountered None FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 7.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-15		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin, Fishburne				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1258.8	Topsoil	0.3	0	3-5-5-8		Natural Soil
1258.5	Stiff stratified silt, ML, moist yellow, and brown		2	13-12-19-28	3.5	
	Do, hard stratified silt, brown, white, and gray below 2 ft		4	14-29-36-40		
			6	36-42-50/5"		
1251.5	Weathered shale, dry black	7.3				Weathered Shale
		8.4	8	50/5"		
1250.4	BTA 8.4 ft					

Water Level Observations: Encountered None FT
Completion - FT

Cave-in 6.5 FT
After - HRS - FT

Boring Backfilled Upon Completion X Yes - No

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-16		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1264.5	Topsoil	0.5	0	2-3-3-3	2.75	
1264.0	Medium stiff, silt with shale fragments, ML, moist strong brown, black and yellow		2	3-3-5-5	2.25	
	Do, hard below 4 ft		4	9-16-16-30		Relic rock features 3-8.5 ft
			6	13-23-19-22	2.75	
1256.0		8.5	8	19-50/3"		
	Weathered shale, moist black	8.8				Weathered shale 8-8.3 ft
1255.7	BTA 8.8 ft.					

Water Level Observations: Encountered Dry FT
 Completion Dry FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 7.0 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-17		
PROJECT NAME: Middle River Regional Jail				DATE: 1/2/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1265.8						
1265.6	Topsoil	0.2	0	2-3-5-5	2.25	Natural Soils
	Medium stiff, lean clay, with sand, CL, moist redbrown		2	3-5-12-12	2.75	
	Do, very stiff below 2 ft					
1261.8		4.0	4	5-50/5"		Weathered Shale
	Weathered shale, moist dark gray		6	50/3"		
	do, wet below 6 ft		8	50/4"		
1257.5		8.3				
	BTA 8.3 ft					

Water Level Observations: Encountered Dry FT

Completion -- FT

Cave-in 6.0 FT

After 4 HRS 4 FT

Boring Backfilled Upon Completion X Yes No

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-18		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 2 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1270.9						
1270.6	Topsoil	0.3	0	2-2-2-4	2.25	
	Soft fat clay, CH, moist tan and gray					
	Do, medium stiff below 2 ft		2	2-3-4-6	0.5	Natural Soils
1267.0	Weathered shale, moist dark gray	3.9	4	12-18-18-50/4"		Weathered Shale
			6	50/5"		
1262.0	BTA 8.9 ft	8.9	8	41-50/4"		

Water Level Observations: Encountered Dry FT
 Completion -- FT
 Boring Backfilled Upon Completion X Yes No

Cave-in FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-19		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 2 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1282.3						
1280.0	Topsoil	0.3	0	2-3-5-6	2.25	
	Medium stiff, elastic silt with sand, MH, moist yellow, brown		2	5-7-8-16		Natural Soils
	Do, stiff, moist yellow, brown, and black	4.0	4	9-25-50/5"		soil shows relic rock appearance from 2-4 ft and 6-7.5 ft
1278.3	Hard, silt, ML, contains rock fragments, moist brown, yellow, black, and white	6.5	6	10-33-45-50/3"		
1275.8	Weathered shale, moist brown, yellow, black, and white		8	50/5"		Weathered Shale
	Do, black and brown below 13.0 ft		13.5	50/4"		
1263.4	Auger Refusal at 14.0 ft	14.0				

Water Level Observations: Encountered Dry FT Completion -- FT Cave-in 11.0 ft After - HRS - FT

Boring Backfilled Upon Completion X Yes No

TEST BORING LOG

CLIENT: Middle River Jail Authority	BORING NUMBER: B-20
PROJECT NAME: Middle River Regional Jail	DATE: 1/ 2 /03
PROJECT LOCATION: Verona, Virginia	BORING METHOD: HSA
BORING LOCATION: See Test Boring Location Plan	PROJECT NUMBER: 03.963.003
FOREMAN: Kevin	INSPECTOR: M. Winbourne

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1286.7	Topsoil	0.5	0	2-2-3-6	1.75	
1286.2	Medium stiff, elastic silt with sand, MH, moist yellow, brown Do, stiff below 2 ft		2	4-7-7-17	2.0	Natural Soils
			4	4-4-6-6	2.5	
	do, moist brown and light gray below 6 ft		6	5-7-8-9	2.5	
	do, moist, yellow, brown, and light gray		8	5-7-7-9	2.25	
	do, hard with rock fragments below 13.5 ft, wet yellow, brown and gray		13	10-26-15-50/5"	0.5	
1271.7	Weathered shale, moist, gray and brown	15.0				Weathered Shale
			18	50/4"		
1263.4	Do, moist-black below 23.0 ft BTA 23.3 ft	23.3	23	50/3"		

Water Level Observations: Encountered 13.0 FT Cave-in 20.0 ft
 Completion 19.0 FT After - HRS - FT
 Boring Backfilled Upon Completion X Yes - No

TEST BORING LOG

CLIENT: Middle River Jail Authority			BORING NUMBER: B-21			
PROJECT NAME: Middle River Regional Jail			DATE: 1/2/03			
PROJECT LOCATION: Verona, Virginia			BORING METHOD: HSA			
BORING LOCATION: See Test Boring Location Plan			PROJECT NUMBER: 03.963.003			
FOREMAN: Kevin			INSPECTOR: M. Winbourne			
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1282.8						
1282.5	Topsoil	0.3	0	3-6-2-2		Natural Soils
	Medium stiff, fat clay, CH, moist brown, and light gray		2	6-6-7-10	3.0	
	Do, stiff below 2 ft		4	3-4-7-7	4.0	
	Do, contains rock fragments below 4 ft		6	3-9-14-50/3"	2.5	
	Do, very stiff below 6 ft	7.8				
1275.0			8	50/4"		Weathered Shale
	Weathered shale, moist brown and gray	8.3				
1274.5						
	BTA 8.3 ft					

Water Level Observations: Encountered DRY FT Cave-in 12.0 ft
Completion - FT After - HRS - FT
Boring Backfilled Upon Completion X Yes - No

TEST BORING LOG

CLIENT: Middle River Jail Authority			BORING NUMBER: B-22			
PROJECT NAME: Middle River Regional Jail			DATE: 1/ 6/03			
PROJECT LOCATION: Verona, Virginia			BORING METHOD: HSA			
BORING LOCATION: See Test Boring Location Plan			PROJECT NUMBER: 03.963.003			
FOREMAN: Kevin, Fishburne			INSPECTOR: M. Winbourne			

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1288.3	Topsoil	0.3	0	2-2-4-6	1.75	Natural Soils
	Medium stiff, lean clay with sand, CL, moist yellow and brown		2	6-8-10-12	3.0	
	Do, very stiff, moist brown, yellow, and gray below 2 ft	4.0				
1284.3	Stiff lean clay, CL, moist, yellow, strong brown, and gray		4	4-6-7-8	2.5	
		6.0				
1282.3	Stiff stratified silt, ML, moist yellow, strong brown, and gray		6	4-7-7-9		
			8	4-5-7-10		
	Do, very stiff, wet, red brown, yellow, black and gray below 13 ft	14.5	13	5-9-11-50/2"		
1273.8	Weathered shale, dry, black		18	50/3"		Weathered Shale
			23	50/0"		Spoon Refusal at 23.0 ft
		26.5				
1261.8	BTA 26.5 ft; Auger Refusal					

Water Level Observations: Encountered 13.5 FT Cave-in 20.0 FT
 Completion None FT After - HRS - FT
 Boring Backfilled Upon Completion X Yes No

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-23		
PROJECT NAME: Middle River Regional Jail				DATE: 1/6/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Sonny				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1289.3						
1289.0	Topsoil	0.3	0	4-16-4-5		Fill
	Hard, sandy lean clay, CL, fill, contains asphalt fragments, black	2.0	2	4-6-9-11		
1287.3	Stiff, stratified sandy lean clay, moist brown and yellow		4	9-15-12-44	1.0	Natural Soils
	Do, hard, yellow and brown below 4 ft		6	11-26-50/4"		
		7.0				
1282.3	Weathered shale, dry, brown and black		8	50/3"		Weathered Shale
		13.0	13	2-2-12-19	0.5	
1276.3	Stiff stratified silt, ML, moist yellow brown, gray and strong brown		18	50/2"		Soil
1271.3	Weathered shale, moist yellow brown and brown		23	13-17-33-50/2"		Weathered Shale
	Do, contains stratified silt layers	24.7				
1264.6	BTA 24.7 ft					

Water Level Observations: Encountered 13.0 FT

Completion - FT

Cave-in 21.3 FT

After - HRS - FT

Boring Backfilled Upon Completion X Yes - No

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-24		
PROJECT NAME: Middle River Regional Jail				DATE: 1/6/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Sonny, Fishburne				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1300.4						
1299.9	Topsoil	0.5	0	5-4-7-8	2.75	Natural Soils
	Stiff silt, ML, moist yellow brown and gray					
	Do, hard, brown, red, gray and yellow below 2 ft		2	8-16-20-25	4.5	
	Do, very stiff below 8 ft		4	7-12-15-21	4.5	
	Do, hard, brown, black and gray below 6 ft		6	4-18-18-21	2.75	
			8	3-9-15-16	2.75	
1282.1	Hard stratified silt, brown, yellow and black below 13 ft		13	6-20-22-33	3.25	
		18.0	18	50/4"	3.75	Weathered Shale
1277.3	Weathered shale, dry, black					
		23.1	23	50/1"		No Recovery
	BTA 23.1 ft; Sampler Refusal					

Water Level Observations: Encountered 18.0 FT
Completion - FT

Cave-in 17.0 FT
After - HRS - FT

Boring Backfilled Upon Completion X Yes - No

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-25		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 7 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Sonny				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1292.2	Topsoil	0.5	0	4-4-6-6		
1291.7	Stiff silt, ML, with brick fragments, fill, moist, brown and red	2.0				Fill
1290.2	Stiff, sandy elastic silt with shale fragments, MH, moist, dark brown		2	4-5-4-4		Natural Soils
	Do, very stiff below 4 ft		4	2-15-6-17	1.0	
	Do, stiff below 6 ft		6	4-7-5-22		
		8.5	8	18-50/1"		
1283.7	Weathered shale, dry, black and brown		13	10-40-50/1"		Weathered Shale
		18.1	18	50/1"		No Recovery
1274.1	BTA 18.1 ft; Sampler Refusal					

Water Level Observations: Encountered 6.0 FT

Completion - FT

Cave-in 13.3 FT

After - HRS - FT

Boring Backfilled Upon Completion X Yes - No

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-26		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 7 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1283.1	Topsoil	0.4	0	8-10-10-13		
1282.7	Medium dense, silty sand, SM, moist orange, brown		2	15-19-17-21		Relic rock features 2-4 ft
	Do, dense below 2 ft					
1279.1	Very stiff, silt, ML, moist brown	4.0	4	7-12-14-18	1.25	
	Do, very stiff below 6 ft		6	8-18-38-27	0.5	
	Do, very stiff below 8 ft		8	6-10-10-13		
	Do, very stiff, contains layer of elastic silt in 13-15 ft sample		13	8-8-9-15	2.0	
1265.1	Weathered shale, moist black	18.0	18	50/3"		Weathered Shale
1264.8	BTA 18.3	18.3				

Water Level Observations: Encountered Dry FT
 Completion 18.3 FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 15.3 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-27		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1283.6	Topsoil	0.4	0	4-4-5-6	2.5	Natural Soils
1283.2	----- Stiff, sandy lean clay, CL, moist yellow tan	-----	2	4-4-6-9	1.5	
			4	3-6-9-10	3.25	
1277.6	----- Very stiff, elastic silt, MH, contains weathered shale fragments	6.0	6	3-7-16-50/4"	3.25	
1276.1	-----	7.5	8	50/4"		Weathered shale
			13	30-32-28-50/1"		
			18	50/2"		
1260.5	Do, wet below 23 ft.	23.1	23	50/1"		
	----- BTA 23.1 ft, Sampler Refusal	-----	-----	-----	-----	-----

Water Level Observations: Encountered 23 FT

Completion - FT

Cave-in 16 FT

After - HRS - FT

Boring Backfilled Upon Completion X Yes - No

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-28		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 3 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1281.7	Topsoil	0.4	0	9-17-20-33	2.25	Natural soils
1281.3	Hard, fat clay, contains white quartz fragments, moist yellow brown and light gray		2	11-17-17-19	2.75	
	Do, hard, contains weathered shale fragments below 4 ft		4	7-11-13-21	1.0	
	Do, very stiff below 4 ft					
1275.7	Hard, silt, ML, contains weathered shale fragments below 6 ft, moist brown	6.0	6	9-19-14-10	0.75	Weathered Shale
			8	17-50/4"		
1268.7	Weathered shale, moist brown and black	13.0	13	50/2"		
	Do, contains lean clay, wet dark brown and black below 18 ft		18	38-50/6"		
1258.7	Do, contains white quartz fragments below 23 ft	23.3	23	41-42-50/3"		
	BTA 23.3 ft					

Water Level Observations: Encountered 18 FT

Completion - FT

Cave-in 20 FT

After - HRS - FT

Boring Backfilled Upon Completion X Yes - No

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-29A		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 8 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: C. Brown		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1281.7	Topsoil	0.5	0	2-5-7-11	3.0	Natural Soil
1281.2	Stiff lean clay, CL, moist yellow and gray		2	7-13-17-17		
1277.7	Stiff, sandy silt, ML, moist yellow and gray	4.0	4	4-5-4-4		
			6	5-6-8-14	3.25	
1273.2	Weathered shale, dry, brown, yellow and gray	8.5	8	24-50/4"		Weathered Shale
			13	8-19-50/3"		
1258.7	BTA 15.0 ft	15.0				

Water Level Observations: Encountered None FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 11.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-30		
PROJECT NAME: Middle River Regional Jail				DATE: 1/2 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1278.8	Topsoil	0.4	0	5-10-8-8	2.0	Natural soils
1278.4	Very stiff, fat clay with sand, moist light brown		2	5-10-15-15	4.5	
	Do, moist light gray below 4 ft		4	7-13-14-20	1.5	
1272.8		6.0	6	8-15-29-50/5"		Weathered shale
1271.3	Hard, silt, ML, contains rock fragments	7.5				
	Weathered shale		8	24-44-50/4"		
	Wet, black below 13 ft		13	42-50/2"		
1260.6	BTA 18.2 ft	18.2	18	50/2"		

Water Level Observations: Encountered 13.0 FT
 Completion 18.2 FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 15.0 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-31		
PROJECT NAME: Middle River Regional Jail				DATE: 1/2/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1278.1	Topsoil	0.4	0	3-4-4-4	0.5	Natural Soils
1277.7	Medium stiff, lean clay, CL, moist tan					
1276.1	Very stiff fat clay, CH, moist yellow tan below 2 ft	2.0	2	5-10-10-12	1.25	
1274.1	Stiff, sandy silt, ML, moist light gray and yellow tan	4.0	4	4-4-7-15	1.5	
	Do, very stiff below 6 ft		6	5-14-16-24	2.5	Weathered Shale
1269.6	Weathered shale, moist brown and gray	8.5	8	20-50/2"		
	Do, elastic silt (MH) layer from 13 to 14 ft, moist brown, gray and black		13	7-20-50/3"		
	Do, moist black below 18ft					
1260.0	BTA 18.1 ft, Sampler Refusal	18.1	18	50/1"		

Water Level Observations: Encountered Dry FT
 Completion 18.1 FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 16.4 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-34		
PROJECT NAME: Middle River Regional Jail				DATE: 1/2/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1273.3	Topsoil	0.4	0	4-4-7-8	0.5	Natural Soil
1272.9	Stiff, lean clay, CL, moist orange brown	2	2	7-17-19-24	1.25	
1271.3	Hard, fat clay, CH, moist tan		4	8-17-21-23	1.5	
	Do, contains rock fragments below 6 ft		6	8-8-12-50/3"	2.5	
1264.8	Weathered shale, moist brown	8.5	8	30-50/2"		weathered shale No recovery 13-15 ft sample interval
1260.2	BTA 13.1 ft, Sampler Refusal	13.1	13	50/1		

Water Level Observations: Encountered Dry FT
 Completion 13.1 FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 9.5 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-35		
PROJECT NAME: Middle River Regional Jail				DATE: 1/2/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL 1260.9	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1260.6	Topsoil	0.3	0	4-5-7-6	1.0	Natural Soil
	Stiff, elastic silt, MH, brown Do, very stiff, moist gray and brown below 2 ft		2	4-6-13-10	2.0	
	Do, stiff below 4 ft	5.5	4	5-6-7-50/4"		
1255.4	Weathered shale, moist gray		6	50/5"		Weathered shale
1252.6	BTA 8.3 ft	8.3	8	50/3"		

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 6 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-36		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kim, EDAC				INSPECTOR: Wilton		

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
	Topsoil	0.5	0	3-10-4	2.75	Natural Soil
	Stiff silt, ML, moist yellow brown and gray					
	Do, stiff, brown, red, gray and yellow below 2 ft		2	4-4-6	4.5	
	Do, very stiff below 4 ft		4	7-11-14	4.5	
			6			Driller skipped 6 ft sample interval
		8.1	8	50/1"		No recovery
	BTA 8.1 ft Sampler Refusal					

Water Level Observations: Encountered None FT
 Completion 8.0 FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 17.0 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-37		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 7 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: C. Brown		

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1266.5	Topsoil	0.5	0	4-7-6-5	1.75	Natural Soil
1266.0	Stiff silt, ML, moist yellow brown and gray		2	4-5-7-11		
	Do, very stiff, stratified silt, brown, red, gray and yellow below 4 ft		4	5-7-10-10		
			6	7-10-12-38		
	Do, hard brown, black and gray below 8 ft		8	14-19-18-17		
1256.5	BTA 10.0 ft	10.0	13			

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 7.4 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority			BORING NUMBER: B-38			
PROJECT NAME: Middle River Regional Jail			DATE: 1/ 6 /03			
PROJECT LOCATION: Verona, Virginia			BORING METHOD: HSA			
BORING LOCATION: See Test Boring Location Plan			PROJECT NUMBER: 03.963.003			
FOREMAN: Sonny, Fishburne			INSPECTOR: J. Starcher			
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1290.3	Topsoil	0.5	0	3-3-4-6	0.5	Natural Soils
1289.8	Medium stiff lean clay, CL, moist red brown	2.0	2	5-10-12-13	2.5	
1288.3	Very stiff stratified silt, yellow brown, and brown		4	4-11-13-27	2.0	
	Do, brown, yellow brown, and gray below 4 ft		6	10-13-10-30		
	Do, stiff below 8 ft		8	11-6-7-13	1.5	
1277.3	Weathered shale, dry, black	13.0	13	50/2"		Weathered Shale Shale Rock
1273.8	BTA 16.5 ft; Auger Refusal at 16.4 ft, Sampler Refusal at 16.5 ft	16.5	16.5	50/1"		

Water Level Observations: Encountered None FT
 Completion 16.5 FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 16.0 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-39		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1294.4	Topsoil	0.3	0	4-6-6-7	2.75	Natural Soil
1294.1	Stiff, silt with sand, ML, moist, strong brown, yellow, black and gray	2.0	2	7-11-11-11	2.25	
1292.4	Very stiff, fat clay, CH, moist yellow, strong brown and gray	4.0	4	4-8-9-11		
1290.4	Very stiff, stratified silt, ML, moist, strong brown, gray and black		6	3-7-11-12	2.75	
	Do, stiff below 8 ft		8	3-6-7-10		Relic Rock Structure
	Do, very stiff below 13 ft		13	4-8-9-10		
	Do, hard below 18 ft		18	30-19-17-31		
	Do, soft, wet below 23 ft		23	2-2-2-28		
1266.4	Weathered shale, moist black	28.0	28	38-50/4"		Weathered Shale
1262.3	BTA 32.1 ft, auger Refusal at 32 ft, Sampler refusal at 32.1 ft	32.1	32	50/1"		

Water Level Observations: Encountered 23.0 FT
 Completion 32.3 FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 28.0 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-40		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Sonny				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1286.4	Topsoil	0.5	0	2-3-3-3	0.5	
1285.9	Medium stiff silt, ML, wet, brown and gray	2.0	2	4-6-8-8	1.25	
1284.4	Stiff lean clay, CL, moist, gray and strong brown		4	2-4-4-7	3.0	
1280.4	Medium stiff with gravel, below 4 ft	6.0	6	2-3-5-6		
	Do, stiff below 8 ft		8	2-6-6-11		
1273.3	Weathered shale, moist, strong brown and black	13.0	13	24-36-50/3"		Weathered Shale
1268.0	BTA 18.3 ft; Auger Refusal	18.3	18	50/3"		

Water Level Observations: Encountered Dry FT
 Completion 18.3 FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 15.25 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-41		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Sonny				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1289.6	Topsoil	0.5	0	3-3-6-7	0.75	Natural Soil
1289.1	Stiff silt with sand, ML, moist, dark red brown	2.0	2	3-11-11-11	2.0	Relic Rock Structure
1287.6	Very stiff stratified silt, ML, moist, black, yellow and brown		4	3-6-10-12		
	Do black, yellow, brown, and gray below 4 ft		6	6-12-15-18		
			8	5-11-15-17		
1277.6	Weathered shale, dry, black	12.0	13	50/5"		Weathered Shale
			18	13-50/3"		
1266.5	BTA 23.1 ft; Sampler Refusal, Auger Refusal at 23.1 ft	23.1	23	50/1"		No Recovery

Water Level Observations: Encountered 18.0 FT

Completion - FT

Boring Backfilled Upon Completion X Yes No

Cave-in 20.6 FT

After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-42		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1290.8	Topsoil	0.5	0	3-4-4-8	1.0	Natural Soil
1290.3	----- Medium stiff, silt with fine gravel, ML, moist brown	----- 2.0	----- 2	----- 4-6-9-12	----- 2.5	-----
1288.8	----- Stiff, clay, CL, moist, strong brown, yellow, red and gray	----- 4.0	----- 4	----- 4-8-10-16	-----	-----
1286.8	----- Very stiff, stratified silt, ML, moist, brown, dark brown, yellow, and gray	----- 7.5	----- 6	----- 6-11-20-50/5"	-----	Relic rock structure 4-6 ft
1283.3	-----	-----	----- 8	----- 50/3"	-----	----- Weathered Shale
1273.7	----- BTA 17.1 ft, Auger refusal at 17.0 ft, Sampler refusal at 17.1 ft	----- 17.1	----- 17.1	----- 50/1"	-----	No recovery 17-17.1 ft
			18			

Water Level Observations: Encountered Dry FT
 Completion 17.1 FT
 Boring Backfilled Upon Completion Yes No

Cave-in 12.3 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-43		
PROJECT NAME: Middle River Regional Jail				DATE: 1/6/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Sonny				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1285.5	Topsoil	0.5	0	2-2-3-4	1.0	Natural Soil
1285.0	----- Medium stiff silt with gravel, ML, moist gray and dark brown	2.0	2	3-6-6-7	2.50	
1283.5	----- Stiff lean clay with gravel, CL, moist gray and strong brown	4.0	4	1-4-7-7	3.25	
1281.5	----- Stiff stratified silt, ML, moist, strong brown, yellow and gray		6	3-4-4-5	0.75	
	Do, medium stiff below 6 ft		8	2-8-12-13		
	Do, very stiff below 8 ft		13	30-28-30/3"		
1271.5	----- Weathered shale, dry, black	14.0	18	50/1"		Weathered Shale
1262.4	----- BTA 23.1 ft; Sampler Refusal	23.1	23	50/1"		

Water Level Observations: Encountered 18.0 FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 20.6 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-44		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1287.7	Topsoil	0.5	0	4-4-6-7	3.0	Natural Soils
1287.2	Stiff, silt with coarse sand, ML, moist, strong brown and yellow-mottled	2.0	2	4-8-8-14	2.25	
1285.7	Very stiff stratified silt, ML, moist, strong brown, yellow and dark brown		4	4-8-14-14		Relic rock structure
		6.0	6	4-12-15-18		
1281.7	Very stiff stratified silt, ML, moist dark brown, yellow and gray		8	6-19-21-30	1.5	
	Do, hard below 8 ft		13	4-6-10-11	2.50	
	Do, very stiff below 13 ft		18	4-6-10-50/3"		
	Do, wet below 18 ft.	19.5				Weathered Shale
1268.2	Weathered shale, moist black					
		23.1	23			
1264.6	BTA 23.1 ft, Sampler Refusal					

Water Level Observations: Encountered 18.0 FT

Completion 23.0 FT

Boring Backfilled Upon Completion X Yes No

Cave-in 21.0 FT

After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-45		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1288.8	Topsoil	0.5	0	2-2-4-4		Natural Soil
1288.3	Medium stiff lean clay, CL, moist red brown	2.0				
1286.8	Stiff silt, ML, moist, red brown and yellow		2	5-5-6-8	2.75	
			4	3-4-5-7	2.0	
1282.8	Stiff silt, ML, moist red brown and yellow	6.0	6	5-7-8-12	1.0	
	Do, very stiff below 8 ft		8	6-8-10-14		
			13	4-11-15-15		
1270.8	Very stiff silt with shale fragments, ML, moist brown and yellow	18.0	18	6-11-13-43		
1265.8	Weathered shale, dry, black	23.0	23	50/2"		
1265.7	BTA 25.0 ft	23.1				Weathered Shale

Water Level Observations: Encountered 18.5 FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 20.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-46		
PROJECT NAME: Middle River Regional Jail				DATE: 1/6/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1285.4	Topsoil	0.8	0	2-2-2-2		Natural Soil
1284.6	Soft silt, ML, moist red brown	2.0				
1283.4	Stiff lean clay, CL, moist brown, yellow, and gray mottled		2	3-4-5-6	2.5	
		5.0	4	2-4-4-5	0.75	
1280.4	Medium stiff stratified silt, ML, moist brown, red brown, yellow, and gray	6.0				
1279.4	Stiff lean clay, CL, moist brown, yellow and gray	8.0	6	3-5-6-7		
1277.4	Stiff silt with shale fragments, ML, moist, gray, dark red brown, and yellow		8	3-5-10-10		
	Do, hard below 13 ft		13	19-26-30-50/2"		
1270.9	Weathered shale, dry, black	14.0				Weathered Shale
			18	50/2"		
1265.4	BTA 20.0 ft; Auger Refusal at 20.0 ft	20.0				

Water Level Observations: Encountered 17.3 FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 17.5 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-47		
PROJECT NAME: Middle River Regional Jail				DATE: 1/3/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1282.8	Topsoil	0.5	0	3-6-9-16	2.5	Natural Soils
1282.3	Stiff, fat clay with sand, CH, moist brown					
	Do, very stiff moist yellow brown below 2 ft		2	7-8-11-14	3.25	
		4.0				
1279.3	Stiff, lean clay, CL, moist yellow brown		4	4-6-8-11	1.5	Weathered Shale
1277.3	Medium dense silty sand, SM, moist light brown and tan	6.0	6	3-9-16-25		
1274.3	Weathered shale, moist tan	9.0	8	24-43-50/5"		
			13	50/6"		
1265.0	Do, black below 18 ft	18.3	18	50/3"		
	BTA 18.3 ft					

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 17.4 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-48		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1287.7	Topsoil	0.3	0	2-3-3-5		
1287.4	Medium stiff silt with rock fragments, ML, moist yellow, red and gray Do, stiff below 2 ft		2	4-6-7-8	3.0	Natural Soil
	Do, stratified silt below 4 ft		4	4-6-8-10	2.5	Relic Rock Structure
	Do, very stiff below 6 ft		6	4-8-20-37		
1278.7	Weathered shale, dry, black	9.0	8	15-33-50/3"		Weathered Shale
			13	50/3"		
			18	18-50/2"		
1264.6	BTA 23.1 ft; Sampler Refusal	23.1	23	50/1"		

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 17.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-49		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1286.7	Topsoil	0.8	0	2-4-5-5		Natural Soil
1285.9	Stiff silt with rock fragments, ML, moist, dark red brown, red and yellow Do, brown and gray below 2 ft		2	5-5-8-11	3.5	
			4	4-6-9-7	2.75	
	Do, stratified silt, yellow, gray and red brown below 6 ft		6	4-4-7-8		
			8	3-6-10-20		
	Do, very stiff, brown and yellow brown below 13 ft		13	8-10-15-17		
			18	14-50/4"		
1268.2		18.5				
	Weathered shale, dry, black		23	50/3"		Weathered Shale
1263.4		23.3				
	BTA 23.3 ft					

Water Level Observations: Encountered Dry FT
Completion - FT
Boring Backfilled Upon Completion X Yes - No

Cave-in 19.5 FT
After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-50		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1283.3	Topsoil	0.5	0	4-4-6-8	2.0	Natural Soils
1282.8	Stiff, silt, ML, moist, dark red brown	2.0	2	4-5-9-10	3.0	
1281.3	Stiff, lean clay with coarse sand, CL, moist, yellow, brown, and gray	4.0	4	2-5-11-12	2.125	
1279.3	Very stiff stratified silt, ML, moist, strong brown, dark brown, and gray		6	2-5-10-13		
	do, stiff below 6 ft		8	2-5-10-11	1.75	
			13	5-6-6-7		
1264.3	Weathered shale, contains calcite, moist black and white	19.0	18	7-38-50/3"		Weathered Shale
	do, Contains quartz 23 to 23.2 ft	23.2	23	50/2"		
1260.1	BTA 23.2					

Water Level Observations: Encountered 23 FT

Completion - FT

Cave-in 19.0 FT

After - HRS - FT

Boring Backfilled Upon Completion X Yes - No

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-51		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 3 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1279.7	Topsoil	0.5	0	3-5-5-10		Natural Soil
1279.2	Stiff, fat clay, CH, contains rock fragments, moist brown	2.0	2	6-25-20-16	1.5	
1277.7	Hard, fat clay, CH, moist tan yellow	4.0	4	5-7-11-16	2.5	
1275.7	Very stiff, lean clay, CL, moist tan and light gray		6	4-11-16-24	1.75	Relic rock features 4-6 ft
	Do, contains weathered shale, moist yellow brown		8	4-7-12-22		
	Do, moist brown below 8 ft.		13	2-4-12-20		
	Do, wet below 13 ft.					Weathered Shale 18.0-18.3 ft
	Do, hard below 18 ft.	18.3	18	50/4"		
1261.4	BTA 18.3 ft.					

Water Level Observations: Encountered 13.0 FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 13.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-52		
PROJECT NAME: Middle River Regional Jail				DATE: 1/6/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1280.3						
1279.3	Topsoil	1.0	0	3-3-3-4	2.5	Natural Soil
	Medium stiff lean clay, CL, moist yellow brown and yellow		2	7-7-9-9	2.5	
	Do, very stiff below 2 ft					
1276.3		4.0	4	3-16-50/4"		
	Hard stratified silt, ML, moist, dark brown, yellow and gray	5.0				
1275.3			6	50/5"		Weathered Shale
	Weathered shale, dry, black		8	50/5"		
			13	50/5"		
			18	50/1"		
1262.2		18.1				
	BTA 20.0 ft, Sampler Refusal at 18.1					

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 14.5 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-53		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1279.5	Topsoil	0.5	0	3-3-4-4	2.5	Natural Soil
1279.0	Medium stiff silt with sand, ML, moist red brown and gray	2.0	2	6-7-8-8	1.75	
1277.5	Stiff lean clay, CL, moist yellow	4.5	4	6-50/3"		
1275.0	Weathered shale, brown, yellow and gray		6	50/3"		Weathered Shale
			8	50/2"		
			13	50/4"		
			18	50/3"		
1251.2	BTA 18.3 ft	18.3				

Water Level Observations: Encountered 15.0 FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 15.5 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-54		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1280.1	Topsoil	0.8	0	3-4-4-4		Natural Soils
1279.3	Medium stiff, lean clay, CL, moist, red brown					
	Do, stiff, with rock fragments, moist yellow and brown below 2 ft		2	4-6-9-9	2.25	
	Do, gray mottling below 4 ft		4	3-4-7-9	2.75	
	Do, medium stiff, moist brown, yellow brown, and yellow below 6 ft		6	4-3-5-6	1.25	
			8	3-3-3-4	0.75	
1267.1		13.0	13	50/3"		
	Weathered shale, dry, black					Weathered Shale
1261.8		18.3	18	50/4"		
	BTA 18.3 ft					

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 16.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-55		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1278.6	Topsoil	0.5	0	2-3-4-5		
1278.1	M. stiff lean clay, CL, with fine gravel, moist, brown and strong brown	2.0	2	4-8-10-12	1.5	Natural Soils
1276.6	Very stiff lean clay, CL, moist, brown, strong brown, and gray	4.0	4	4-5-17-42	2.5	
1274.6	Very stiff stratified silt, ML, moist, brown, and strong brown		6	7-27-22-17	1.75	Relic rock structure 4-9.5 ft
	Do, hard below 6 ft		8	6-39-30-50/5"		
1269.1	Do, moist, brown yellow and gray below 8 ft	9.5	13	50/3"		Weathered Shale
	Weathered shale, moist black		18	50/1"		No recovery
1260.5	BTA 18.1 ft, Sampler refusal	18.1				

Water Level Observations: Encountered Dry FT

Completion - FT

Boring Backfilled Upon Completion X Yes No

Cave-in 16.2 FT

After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-56		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 8 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1275.8	Topsoil	0.5	0	2-3-2-4		Natural Soils
1275.3	Medium stiff, lean clay, CL, with fine gravel, moist, brown and strong brown	2.0	2	3-6-6-12	1.5	
1273.8	Stiff, lean clay, CL, moist, brown, strong brown, and gray	4.5	4	8-16-28-40		
1271.3	Hard, stratified silt, ML, moist, brown, and strong brown		6	10-30-50/4"		
	Do, moist, brown, yellow and gray below 7 ft.		8	30-50/3"		
1267.3	Weathered shale, moist black	8.5				Weathered Shale
			13	50/4"		
1262.6	BTB 13.3 ft	13.3				

Water Level Observations: Encountered 12.0 FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 12.3 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-57		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1274.5	Topsoil	0.8	0	2-4-4-4	1.5	Natural Soils
1274.3	Medium stiff, fat clay, CH, moist, red brown					
	Do, stiff, moist, light red brown and gray-mottled below 2 ft		2	3-5-7-8	2.25	
1270.5	Very stiff silt with shale fragments, ML, moist light red brown, yellow, black and gray	4.0	4	4-8-9-12	3.5	
1268.0	Weathered shale, moist yellow, gray, and brown	6.5	6	25-50/5"		Weathered shale
			8	31-48-50/4"		
	Do, black below 13 ft		13	50/2"		
1259.5	BTA 13.2 ft	13.2				

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 11.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-58		
PROJECT NAME: Middle River Regional Jail				DATE: 1/8/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1276.6	Topsoil	0.5	0	3-3-6-8	1.0	Natural Soils
1274.6	Stiff, lean clay with gravel, CL, moist, strong brown and black	2.0	2	3-6-7-9	2.5	
	Stiff, silt, ML, moist, strong brown, yellow and gray mottled		4	3-7-10-15		
	Do, very stiff, below 4 ft.		6	3-44-44-30		
	Do, hard, below 6.5 ft.		8	3-16-19-46		
1263.6	Weathered shale, moist black	13.0	13	50/1"		Weathered Shale
1256.6	BTA 18.1 ft, Sampler Refusal at 18.1 ft	18.1	18	50/1"		

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 15.7 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-59		
PROJECT NAME: Middle River Regional Jail				DATE: 1/6/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1273.8	Topsoil	0.3	0	3-3-3-5		Natural Soils
1273.5	Medium stiff, silt with gravel, ML, moist, red brown and yellow	2.0	2	5-6-8-8	2.75	
1271.8	Stiff, lean clay, CL, moist brown, yellow and gray-mottled		4	3-4-5-7	2.75	
1267.8	Stiff, silt with shale fragments, ML, moist brown, yellow, and gray	6.0	6	5-6-7-9	1.75	
	Do, very stiff below 8 ft		8	5-10-9-9		Weathered shale 14.5 to 14.7 ft
	Do, dry, black below 9.7 ft		13	9-20-7-50/2"		
1259.1	BTA 14.7 ft	14.7				

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 12.5 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-60		
PROJECT NAME: Middle River Regional Jail				DATE: 1/8 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1273.1	Topsoil	0.5	0	3-3-5-7	3.0	Natural Soils
1272.6	Medium stiff, lean clay, CL, moist, yellow brown and strong brown Do, Very stiff, with gravel, moist brown, yellow brown, and gray below 2 ft		2	6-10-12-20	2.75	
1269.1	Very stiff, stratified silt with shale fragments, ML, moist, brown, yellow brown, gray and black	4.0	4	8-10-9-20		
1266.6	Weathered shale, moist, black	6.5	6	8-50/4"		Relic rock structure below 4 ft Weathered Shale
			8	8-17-50/4"		
1260.0	BTA 13.1ft, Sampler Refusal at 13.1 ft.	13.1	13	50/1"		

Water Level Observations: Encountered Dry FT
Completion - FT
Boring Backfilled Upon Completion X Yes - No

Cave-in 11.3 FT
After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-61		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1273.7	Topsoil	0.5	0	2-2-3-3		Natural Soils
1273.2	Medium stiff, lean clay with sand, CL, moist, brown and gray	2.0	2	3-6-6-8	2.0	
1271.7	Stiff, silt with fine gravel, ML, moist, yellow brown, brown and gray		4	4-6-14-15	2.25	
	Do, very stiff below 4 ft		6	5-8-8-11		
	Do, very stiff, stratified silt below 6 ft		8	6-10-17-24		
1260.7	Weathered shale, dry, black	13.0	13	50/3"		
1260.4	BTA 13.3 ft	13.3				Weathered shale 13.0 to 13.3 ft

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 11.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-62		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 8 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1273.8	Topsoil	0.5	0	3-4-4-4	2.25	Natural Soil
1273.3	Medium stiff, silt, ML, with fine gravel, moist, yellow brown and black	2.0	2	4-7-8-16	2.0	
1271.8	Medium dense, clayey sand, SC, moist brown and red	4.0	4	7-13-14-36	1.75	
1269.8	Very stiff, stratified silt, ML, moist brown, strong brown, and gray		6	14-21-27-34		Relic rock structure below 4.0 ft.
	Do, hard below 6 ft		8	11-33-40-50/3"		
1264.3	Weathered shale, moist black	9.5	13	50/1"		
1260.7	BTA 13.1 ft., Sampler Refusal	13.1				Weathered Shale

Water Level Observations: Encountered Dry FT

Completion - FT

Boring Backfilled Upon Completion X Yes No

Cave-in 11.8 FT

After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-63		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 8 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: C. Brown		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1273.8	Topsoil	0.5	0	2-2-2-4	2.25	Natural Soils
1273.3	Soft, silt with fine gravel, ML, moist, brown and yellow Do stiff, black and red brown below 2 ft		2	4-6-6-8	3.5	
	Do, gray mottling below 4 ft		4	3-4-7-8	2.0	
1267.8	Weathered shale, dry, black and gray	6.0	6	50/5"		Weathered shale
			8	50/5"		
1260.6	BTA 13.2 ft	13.2	13	50/2"		

Water Level Observations: Encountered Dry FT
Completion - FT
Boring Backfilled Upon Completion X Yes - No

Cave-in 11.0 FT
After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-64		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: C. Brown		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1271.9						
1271.4	Topsoil	0.5	0	3-2-3-4	2.25	Natural Soils
	Medium stiff, sandy lean clay, CL, moist brown					
	Do, very stiff, yellow brown, brown, and gray below 2 ft		2	6-7-17-21	3.5	
1267.9		4.0	4	13-18-20-43	2.0	
	Hard stratified silt, ML, dry, black, brown and yellow brown					
			6	11-14-25-36		
			8	26-40-50/4"		
1262.9		9.0				
1262.6	Weathered shale, dry, black	9.3				Weathered shale
	BTA 9.3 ft					

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 7.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-65		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 3 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1271.4	Topsoil	0.3	0	2-3-4-5	3.0	Natural Soils
1271.1	Medium stiff, lean clay, CL, moist, brown and gray		2	5-5-10-18	1.5	
	Do, stiff, moist, brown and yellow brown below 2.0 ft		4	10-22-50/5"	1.25	
1266.4	Weathered shale, moist brown	5.0	6	50/4"		
	Do, dry black		8	50/3"		Weathered shale
1263.1	BTA 8.3 ft	8.3				

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 7.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-66		
PROJECT NAME: Middle River Regional Jail				DATE: 1/8 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1271.7	Topsoil	0.5	0	3-6-6-5	3.0	Natural Soils
1271.2	Stiff, lean clay, CL, dry, strong brown, red, and gray	-----				
	Do, very stiff, moist, brown, yellow, and gray below 2 ft		2	4-7-10-13	2.75	
1268.2	Very stiff, stratified silt, ML, moist, brown, yellow, and gray	3.5	4	4-7-12-27		
	Hard, moist yellow brown, below 6 ft	-----	6	33-50/4"		
	Very stiff, moist brown and gray below 8 ft		8	4-10-14-34		
1261.7	BTA 10.0 ft.	10.0	-----	-----	-----	-----

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 6.1 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-67		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1269.8						
1268.8	Topsoil	1.0	0	2-3-3-3	1.75	Natural Soil
	Medium stiff, silt with fine gravel, ML, wet, brown and yellow		2	4-3-5-6	2.25	
	Do, gray mottled below 2 ft		4	3-6-13-30		
	Do, very stiff brown, yellow, and gray below 4 ft		6	16-18-28-31		
	Do, hard stratified silt, yellow, brown, and gray below 6 ft		8	20-25-22-25		
1259.8		10.0				
	BTA 10.0					

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 7.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-68		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 8 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1268.9						
1268.6	Topsoil	0.3	0	3-5-7-10	0.5	Natural Soils
	Stiff, silt, ML with fine gravel, moist, yellow brown and black	2.0				
1266.9			2	4-8-7-7	1.0	
	Stiff, lean clay, CL, moist, brown, yellow, and gray	4.5				
1264.5			4	17-50/5"	3.0	Weathered Shale
	Weathered Shale, moist, black		6	26-50/3"		
			8	22-50/2"		
1260.3		8.7				
	BTA 8.7 ft					

Water Level Observations: Encountered None FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 6.7 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-69		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1270.5						
1270.2	Topsoil	0.3	0	2-2-2-4	2.5	
	Soft, elastic silt, MH, with sand, moist yellow tan		2	4-8-9-10	2.75	
	Do, very stiff, moist yellow tan and gray below 2 ft		4	3-18-35-41	1.5	Relic rock features 4-6 ft.
1264.5	Do, hard below 4 ft	6.0	6	50/3"		
	Weathered shale, moist gray		8	12-6-50/5"		Weathered Shale
1255.1	BTA 9.4 ft.	9.4				

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 6.1 FT
 After - HRS - FT

March 25, 2003

Middle River Regional Jail Authority
c/o Heery International, Inc.
8201 Corporate Drive, Suite 800
Landover, Maryland 20785-2230

Attention: Mr. E. J. McGowan, P.E.

Subject: Proposal for Earthwork Testing and Observation
Middle River Regional Jail

Dear Mr. McGowan:

We are pleased to provide you with our proposal for earthwork testing and observation for the proposed Middle River Regional Jail at Verona, Virginia. We have prepared this proposal based on the information you provided us and our knowledge of the site conditions based on our Geotechnical Engineering Study dated, January 30, 2003.

Our proposed scope of services is for all work associated with the typical mass earthwork anticipated for this project. At your request, we have based our proposal on a 10 week schedule for earthwork. We understand the earthwork may overlap with building construction and other project phases. There is a potential for cost savings with this overlap if we can provide the services required by the project plans and specifications with one engineering technician on site. Our technician will relocate to the area and provide the project with in-town service. The only mileage charge anticipated is for our project engineer to attend possible progress meetings.

Please contact us if you have any questions or require any additional information. We look forward to the opportunity of working with you on this project.

Sincerely,

Zannino Engineering, Inc.

Russell S. Harris, Jr., P.E.
Senior Engineer

PROPOSAL

MIDDLE RIVER REGIONAL JAIL

INTRODUCTION

This proposal is based on an estimated ten week earthwork schedule for full time observation and testing of cut and fill. The earthwork for this project will consist of building a perimeter road, cut for buildings and slopes near the perimeter road, fill for both the perimeter road and buildings and appurtenances, and backfilling utilities. If requested and required, we can provide a small on site office trailer, or we can share a trailer with the contractor if that is acceptable.

SCOPE OF SERVICES

Our proposed scope of services is summarized below.

Sitework

Zannino Engineering, Inc. plans on being on site to observe stripping and make recommendations for deeper stripping, if needed, to remove all topsoil, organic materials, and foreign materials, if present. After stripping, all areas to receive compacted fill will be proof-rolled to evaluate whether any undercutting or soil stabilization will be required. We will make recommendations regarding lateral and vertical extent of undercutting. In addition, we will make recommendations for soil stabilization if needed. We will document the undercutting, if requested, to verify that we are in agreement with the contractor's undercut quantities.

Samples of soil to be used as compacted fill will be taken if different than those obtained for our Geotechnical Engineering Study. These samples will be subjected to classification and compaction testing in our soils laboratory. During the filling operation we will monitor fill placement and perform field density testing to evaluate compliance with project specifications. We will report any areas of non-compliance to the on site superintendent of the earthwork operation and will document any corrective actions by the contractor. We will record the results of daily density testing on a daily form and will submit a draft field copy to the on site superintendent. We will be available for any consultation for problem areas or critical phases of the sitework development. The technician's draft daily field reports will be reviewed by the project engineer on a weekly basis, and will be mailed weekly to the Project Construction Manager and any other designated parties, with a cover letter summarizing the past weeks activity.

Construction Materials Evaluation

During the excavation of footings we can provide field testing and construction observation services for concrete placement and steel reinforcing, concrete compression testing, structural steel observation, and asphalt placement and testing. We have provided in the attached Fee Schedule our unit rates for the different types of tests and inspections anticipated for this project.

As stated in our cover letter for this proposal, cost savings for the construction materials phase of the project may be realized if building construction overlaps with the mass earthwork phase.

Our services include subgrade evaluation, observation and testing of compacted structural fill, soil laboratory testing, and project management and administration.

Our services do not include: construction management, preparation of detailed plans and specifications, and any other service not described herein.

Fees

The estimated fee for our services is **\$18,010.00**. This fee may be more or less and depends upon the hours worked, the number of tests performed, and the contractor's progress.

The services requested will be invoiced monthly based on the attached Fee Schedule. We will invoice you for the actual services performed during that period. The fees outlined in this proposal will remain active for 60 days. If this proposal is not activated within 60 days, we reserve the right to modify the scope of services and/or fees of such services.

Services will be conducted in accordance with the attached Terms and Conditions. As stated in the Terms and Conditions, payment is due and payable within 30 days after receipt of our invoice. If payment cannot be made within this 30 day period, please let us know so we can negotiate payment terms that are mutually acceptable.

Please indicate your acceptance of this proposal by signing below and returning the signed copy to our office, and retain one copy for your records. You may fax your acceptance to our office at (804)-262-8479 with the understanding that a fax signature copy will be treated as an original signature.

We appreciate the opportunity to provide services for this project. If any of our fees or estimates seem unreasonable or not applicable, please call us.

Sincerely,
Zannino Engineering, Inc.

Thomas Zannino, P.E.
President

Accepted by client:

MIDDLE RIVER REGIONAL JAIL AUTHORITY

Printed Name and Title

Signature

Date

FEE SCHEDULE AND FEE ESTIMATE

CLIENT: Middle River Regional Jail Authority
c/o Heery International, Inc.
8201 Corporate Drive, Suite 800
Landover, Maryland 20785-2230

Attention: Mr. E. J. McGowan, P.E.

PHONE: (301) 577-9408

FAX: (301) 577-9472

EMAIL: emcgowan@heery.com

PROJECT: Proposed Middle River Regional Jail
Verona, Virginia

Description of Services: Earthwork Testing

FEE SCHEDULE

FIELD TESTING AND OBSERVATIONS

Senior Soil Engineering Technician Services

Regular Time	\$ 32.00/hour
Overtime	\$ 42.00/hour
Nuclear Moisture/Density Gauge	No Charge

Project Management/Consultation/Review by Registered P.E.

Staff Engineer	\$ 65.00/hour
Senior Geotechnical Engineer	\$ 80.00/hour
Principal	\$ 90.00/hour

LABORATORY SERVICES

Natural Moisture Content	\$ 5.00/ea.
Minus 200 Sieve	\$ 25.00/ea.
Washed Sieve Analysis	\$ 45.00/ea.
Dry Sieve Analysis (Stone or Gravel)	\$ 45.00/ea.
Atterberg Limits	\$ 45.00/ea.
Standard Proctor (ASTM D 698 soil)	\$ 85.00/ea.
Standard Proctor (stone or gravel)	\$ 95.00/ea.
California Bearing Ratio	\$125.00/ea.

ON-SITE TRAILER (Quoted upon request)

ENGINEERING AND ADMINISTRATION

Administration	\$ 25.00/hour
Engineering Aide (surveying/drafting)	\$ 40.00/hour
Project Geotechnical Engineer, P.E.	\$ 65.00/hour
Senior Geotechnical Engineer, P.E.	\$ 80.00/hour
Principal	\$ 90.00/hour

BUDGET ESTIMATE (10 WEEK SCHEDULE)

PROJECT: Proposed Middle River Regional Jail
Verona, Virginia

Description of Services: Earthwork Budget Estimate

EARTHWORK - Full time observation to evaluate mass grading of subgrades, undercuts, and compacted fill testing during construction of building pads, parking areas, etc.

Senior Engineering Technician, RegTime	400 Hr.	\$32.00	\$12,800.00
Senior Engineering Technician, OverTime	50 Hr.	\$42.00	\$ 2,100.00
Nuclear Density Gauge	50 Days	\$20.00	\$ No Charge
Geotechnical Engineer, PE	20 Hr.	\$65.00	\$ 1,300.00
Senior Geotechnical Engineer	10 Hr.	\$80.00	\$ 800.00
Principal	5 Hr.	\$90.00	\$ 450.00
Moisture Content	10 Ea.	\$ 5.00	\$ 50.00
Standard Proctor (soil)	2 Ea.	\$85.00	\$ 170.00
Sieve Analysis (soil)	2 Ea.	\$45.00	\$ 90.00
Atterberg Limits	2 Ea.	\$45.00	\$ 90.00
Mileage (2 trips)	400 mis.	\$ 0.40	\$ 160.00

ESTIMATED TOTAL COST

\$18,010.00

TERMS AND CONDITIONS

1. The services and prices quoted are those which we typically provide for the anticipated nature of this project.
2. Hourly charges for travel are based on portal-to-portal time using the same unit rates for the individual performing services. These charges will only be incurred for engineers visiting the site with your authorization and for transport to our soils laboratory for soil testing.
3. Mileage will be charged at \$0.40 per mile portal to portal.
4. The normal work day is 6:00 a.m. to 6:00 p.m., overtime rates will be applicable for services performed outside of these hours, over 8 hours per day within this period, and on Saturday, Sundays and holidays.
5. Total labor costs will depend on the hours per day worked as scheduled by the contractor.
6. Invoices are to be forwarded to you for payment unless other arrangements are needed.
7. We reserve the right to withhold all reports until we receive a signed contract or other written authorization.
8. Payment is due within 30 days after the receipt of invoice. All overdue accounts are subject to a finance charge of 1.5% per month.
9. If accepted, please sign and return one copy of this proposal to our office for our records.

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-70		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL 1267.6	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1266.3	Topsoil	1.3	0	2-2-3-3		Natural Soils
	Medium stiff lean clay, CL, moist, strong brown, red, and gray-mottled Do, stiff below 2 ft		2	6-6-6-7	2.0	
1263.6		4.0	4	3-5-5-8	2.25	
	Stiff, silt with gravel and shale fragments, ML, moist, red, brown, yellow, and gray		6	4-9-17-35	3.25	
1258.8	Do, very stiff, stratified silt, dry, brown, yellow and gray	8.8	8	33-50/3"		Weathered Shale 8.5 - 8.8 ft
	BTA 8.8 ft.					

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 7.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-71		
PROJECT NAME: Middle River Regional Jail				DATE: 1/3/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1268.1	Topsoil	0.3	0	2-3-3-6	2.5	Natural Soil
1267.8	Medium stiff, elastic silt, MH, moist tan and light gray		2	8-7-9-18	2.25	
	Do, stiff, moist yellow tan and light gray below 2 ft.		4	11-24-32-33	4.0	
	Do, hard below 4 ft					
1262.1	Weathered shale, moist gray and brown below 6 ft.	6.0	6	8-21-23-31		Weathered Shale
			8	21-28-50/5"		
1258.7	BTA 9.4 ft.	9.4				

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 5.8 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-72		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1268.2	Topsoil	0.5	0	3-4-4-5		
1267.7	Medium stiff, elastic silt with sand, MH, dry, strong brown and gray mottled Do, very stiff silt, moist, brown, dark brown, yellow and gray below 2 ft.		2	6-8-10-13	2.75	Natural Soil
	Do, with gravel below 4 ft		4	4-8-10-12	4.5	
			6	9-9-14-50/5"	2.75	
1260.7	Weathered shale, moist black	7.5				Weathered shale
			8	50/3"		
1260.0	BTA 8.3 ft	8.3				

Water Level Observations:

Encountered DRY FT

Completion - FT

Boring Backfilled Upon Completion X Yes - No

Cave-in 7.5 FT

After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-73		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: C. Brown		
EL 1266.6	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1266.1	Topsoil	0.5	0	2-3-4-5		Natural Soils
	Medium stiff, lean clay, CL, moist, brown, red					
1262.6	Do, stiff, gray-mottled below 2 ft		2	4-6-6-8	2.5	
		4.0	4	3-6-8-9	4.25	
	Stiff, silt with gravel, ML, moist, brown, yellow, and gray					
1256.6	Do, hard below 6 ft		6	16-17-21-21	4.25	
	Do, hard, stratified silt, moist, black, brown, and dark gray below 8 ft		8	12-14-18-15		
		10.0				
	BTA 10.0 ft					

Water Level Observations: Encountered DRY FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 7.2 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-74		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: C. Brown		

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1266.1						
1265.8	Topsoil	0.3	0	3-3-5-6	3.5	Natural Soils
	Medium stiff, fat clay with sand, CH, moist, strong brown, yellow, and gray	2.0	2	6-8-12-13		
1264.1	Very stiff stratified silt, ML, moist, brown, yellow, and black		4	6-9-12-15		
	Do, hard below 6 ft		6	11-16-21-28		
	Do, black below 8 ft		8	20-24-30-32		
1256.1	BTA 10.0 ft	10.0				

Water Level Observations: Encountered DRY FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 6.5 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-75		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 76/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: M. Winbourne		

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1266.1						
1265.6	Topsoil	0.5	0	3-5-6-7		Natural Soils
	----- Stiff, silt, ML, moist strong brown and gray	-----				
	Very stiff, stratified silt, moist, dark brown, strong brown, gray and black below 2 ft		2	7-10-16-19		
			4	6-12-13-17		
	Do, hard below 6 ft		6	23-30-27-25		
	Do, moist black below 8 ft		8	19-21-36-42		
1256.1		10.0				
	----- BTA 10.0 ft.	-----				

Water Level Observations:

Encountered Dry FT

Completion Dry FT

Boring Backfilled Upon Completion X Yes No

Cave-in 7.0 FT

After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-76		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: C. Brown		

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Rocket Pen (tsf)	Comments
1264.5	Topsoil	0.3	0	2-2-4-5	2.0	Natural Soil
1264.2	Medium stiff, lean clay, CL, moist, yellow and brown		2	8-11-11-11	4.5	
	Do, very stiff, brown and gray below 2 ft					
1260.5	Very stiff, silt with rock fragments, ML, moist, brown, red and gray	4.0	4	8-11-12-16		
	Do, stratified silt, brown, black and gray below 6 ft		6	7-7-16-14		Weathered Shale 9.5-9.8 ft
			8	8-12-26-50/4"		
1254.7	BTA 9.8 ft	9.8				

Water Level Observations: Encountered DRY FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 7.0 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-77		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1285.3						
1284.8	Topsoil	0.5	0	2-4-7-6	1.5	Natural Soil
	Stiff, lean clay, CL, moist strong brown		2	5-6-8-12	4.0	
			4	3-5-10-13	2.0	
	Do, hard, moist, yellow, strong brown, and gray below 6 ft		6	4-16-26-19		Relic rock structure below 6 ft
1277.3		8.0	8	50/4"		Weathered Shale Classifies as a silty sand from 8-10 ft based on lab results.
	Weathered shale, moist brown, yellow and gray		13	50/4"		
	Do, black below 18 ft.		18	44-50/3"		
			23	25-50/4"		
1261.5		23.9				
	BTA 23.9					

Water Level Observations: Encountered 23.0 FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes - No

Cave-in 21.5 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-78		
PROJECT NAME: Middle River Regional Jail				DATE: 1/7/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Sonny				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1282.3	Topsoil	0.2	0	3-11-9-19	3.0	Natural Soils
1282.1	Very stiff, silt with shale fragments, ML, moist, yellow, brown, and gray		2	20-28-30-30	4.5	
	Do, hard, with gravel, white, brown, and yellow below 2 ft		4	5-12-17-25	4.0	
	Do, very stiff stratified silt, brown, gray and black below 4 ft		6	4-10-14-18		
	Do, hard brown and yellow below 8 ft		8	9-20-22-18		
1269.3	Weathered shale, dry black	13.0	13	50/3"		Weathered Shale
1264.2	BTA 18.1 ft, Sampler Refusal	18.1	18	50/1"		

Water Level Observations: Encountered DRY FT
 Completion 18.1 FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 13.8 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-82		
PROJECT NAME: Middle River Regional Jail				DATE: 1/2 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1289.0						
1288.5	Topsoil	0.5	0	3-3-4-5	0.5	Natural Soils
	Medium stiff, fat clay, CH, moist tan and yellow brown		2	5-10-15-21	3.25	
	Do, very stiff, moist yellow brown and gray below 2 ft		4	10-14-16-18	4.5	
1281.5		7.5	6	3-5-40-50/3"		Weathered Shale
	Weathered shale, moist gray		8	14-50/2"		
			13	50/3"		
1270.9		18.1	18	50/1"		
	BTA 18.1ft, Sampler Refusal					

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 13.2 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-83		
PROJECT NAME: Middle River Regional Jail				DATE: 1/2 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1277.9	Topsoil	0.4	0	4-5-5-7	2.25	Natural Soils
1277.5	Stiff, fat clay, CH, moist tan brown					
	Do, hard, below 2 ft		2	10-15-18-20	3.75	
	Do, very stiff moist gray and tan below 4 ft		4	5-8-9-12	.75	
	Do, hard below 6 ft		6	10-15-23-28		
1269.4		8.5	8	27-45-38-33		Weathered Shale
	Weathered shale, moist black white and brown					
1264.0		13.9	13	38-50/5"		
	BTA 13.9 ft.					

Water Level Observations: Encountered Dry FT
 Completion 13.4 FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 12.0 FT
 After HRS FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-84		
PROJECT NAME: Middle River Regional Jail				DATE: 1/3 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1281.3	Topsoil	0.4	0	9-8-7-10	.75	Natural Soils
1280.9	Stiff, elastic silt, MH, moist brown	2.0	2	11-15-20-28	4.0	
1279.3	Hard, lean clay, CL, moist white and tan		4	8-13-17-25	4.5	
	Do, very stiff, moist tan and brown below 4 ft.	6.0	6	13-22-31-43	4.0	Relic rock features below 6 ft.
1275.3	Hard, silt, ML, moist brown		8	17-39-40-48	4.5	
		13.0	13	50/3"		
1268.3	Weathered shale, moist black	13.3				Weathered shale
1268.0	BTA 13.3 ft.					

Water Level Observations: Encountered Dry FT

Completion - FT

Cave-in 12.0 FT

After - HRS - FT

Boring Backfilled Upon Completion X Yes No

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-85		
PROJECT NAME: Middle River Regional Jail				DATE: 1/2 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1274.7	Topsoil	0.4	0	4-4-5-6	.75	Natural Soils
1274.3	Stiff, fat clay, CH, moist tan					
	Do, very stiff moist yellow brown below 2 ft.		2	7-13-14-20	4.25	
	Do, hard contains rock fragments below 4 ft		4	10-20-16-16		
1268.7	Hard, silt, ML, moist brown	6.0	6	6-17-42-44	2.0	Weathered shale
			8	18-22-50/3"	2.0	
1265.7	Weathered shale, moist brown and black	9.0				
	Do, gray below 13 ft.	13.3	13	50/3"		
1261.4	BTA 13.3 ft					

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 10.8 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-86		
PROJECT NAME: Middle River Regional Jail				DATE: 1/2 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		

EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1276.5	Topsoil	0.4	0	3-6-6-13	.75	Natural Soils
1276.1	Stiff, lean clay, CL, moist brown					
	Do, hard, moist yellow brown and light gray below 2 ft		2	12-30-30-30	4.5	
			4	12-20-20-25	3.5	
			6	5-15-17-24	1.75	Relic rock features 6-8 ft
			8	14-30-23-30	4.5	
1266.5	BTA 10.0 ft	10.0				

Water Level Observations: Encountered Dry FT
 Completion - FT
 Boring Backfilled Upon Completion X Yes No

Cave-in 7.4 FT
 After - HRS - FT

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-101A		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 8/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: C. Brown		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1296.0						
1295.5	Topsoil	0.5	0	2-2-4-4	3.5	Natural Soil
	Medium stiff, silt with sand, ML, moist, brown and gray	2.0				
1294.0			2	4-5-7-10	3.25	
	Do, stiff, stratified elastic, MH, moist, brown, gray, and yellow below 2 ft					
			4	4-6-8-9		
	Do, stiff moist, brown, gray and black below 4 ft					
			6	4-5-7-8	3.0	
			8	3-5-7-7	2.25	
		13.0				
1283.0			13	2-2-3-3	1.75	
	Medium stiff, sandy fat clay, CH, moist brown, gray and black					
	Do, soft below 18 ft		18	2-2-2-5		
		20.0				
1254.8						
	BTA 20.0 ft					

Water Level Observations:

Encountered Dry FT

Cave-In 22.0 FT

Completion - FT

After - HRS - FT

Boring Backfilled Upon Completion X Yes No

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-101 B		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 8/03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: C. Brown		
El	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1296.0	Auger probe to 23 ft, refer to B-101 for stratum description					
1273.0	Weathered shale, dry black and brown	23.0 23.1	23	50/1"		Weathered Shale 23-23.1 ft
1272.9	BTA 23.1 ft, Sampler Refusal					

Water Level Observations:

Encountered Dry FT
Completion Dry FT

Boring Backfilled Upon Completion Yes X No

Water observation well installed to 23 ft.

1-17-03: 9.5 ft < Ground Surface

TEST BORING LOG

CLIENT: Middle River Jail Authority				BORING NUMBER: B-102		
PROJECT NAME: Middle River Regional Jail				DATE: 1/ 6 /03		
PROJECT LOCATION: Verona, Virginia				BORING METHOD: HSA		
BORING LOCATION: See Test Boring Location Plan				PROJECT NUMBER: 03.963.003		
FOREMAN: Kevin				INSPECTOR: J. Starcher		
EL	Soil Descriptions	Stratum Break (ft)	Sample Depth (ft)	Blows	Pocket Pen (tsf)	Comments
1296.0						
1295.5	Topsoil	0.5	0	4-7-7-8	1.25	Natural Soil
	Stiff, fat clay, CH, with sand, moist dark red brown and black					
	Do, very stiff, brown, and gray below 2 ft		2	5-8-8-11	1.75	
1292.0		4.0				
	Very stiff, silt, ML, moist brown, yellow and gray		4	5-8-11-15	3.75	
			6	3-7-11-12		Relic Rock features 6-8 ft
	Do, yellow brown, gray, brown, black and red below 8 ft		8	3-7-11-12	1.75	
1283.0		13.0				
	Loose, silty sand, SM, contains rock fragments, moist brown black, gray and red		13	3-4-5-8		
1278.0		18.0				
	Weathered shale, wet, black and brown		18	50/4"		Weathered Shale
1272.9		23.1				
	BTA 23.1 ft, Sampler Refusal		23	50/1"		

Water Level Observations:

Encountered 23.0 FT

Boring Backfilled Upon Completion Yes X No

Completion - FT

Water observation well installed to 23 ft.

1/17/03 - 8.5 ft < Ground Surface

**Middle River Regional Jail
Summary of Soil Laboratory Test Results**

Sample I.D.	Sieve Analysis			Moisture Content	Atterberg Limits			Soil Classif.	Max Dry Density	Optimum Moisture Content	CBR	
	Gravel	Sand	Silt and Clay		Liquid Limit	Plastic Limit	Plasticity Index				Dry	Soaked
B-10 0-2	-	-	-	14.6	-	-	-	-	-	-	-	-
B-12 0-2	-	-	-	23.4	-	-	-	-	-	-	-	-
B-16 0-2	-	-	-	19.0	-	-	-	-	-	-	-	-
B-17 Bulk	-	-	-	25.7	-	-	-	-	-	-	-	-
B-18 Bulk	-	-	-	23.6	-	-	-	-	-	-	-	-
B-19 0-2	-	-	-	34.7	-	-	-	-	-	-	-	-
B-19 2-4	-	-	-	37.6	-	-	-	-	-	-	-	-
B-19 4-6	-	-	-	18.3	-	-	-	-	-	-	-	-
B-19 6-8	-	-	-	5.9	-	-	-	-	-	-	-	-
B-19 8-10	-	-	-	10.9	-	-	-	-	-	-	-	-
B-19 Bulk	2.4	26.2	71.4	36.7	64.1	31.5	32.6	MH/A-7-5	95.8	21.8	12.4	4.7

Notes: AASHTO and Unified Soil Classification shown for CBR samples.

**Middle River Regional Jail
Summary of Soil Laboratory Test Results**

Sample I.D.	Sieve Analysis			Moisture Content	Atterberg Limits			Soil Classif.	Max Dry Density	Optimum Moisture Content	CBR	
	Gravel	Sand	Silt and Clay		Liquid Limit	Plastic Limit	Plasticity Index				Dry	Soaked
B-20 0-2	-	-	-	38.3	-	-	-	-	-	-	-	-
B-20 2-4	-	-	-	47.2	-	-	-	-	-	-	-	-
B-20 4-6	-	-	-	43.3	-	-	-	-	-	-	-	-
B-20 6-8	-	-	-	31.6	-	-	-	-	-	-	-	-
B-20 8-10	-	-	-	31.1	-	-	-	-	-	-	-	-
B-20 Bulk	5.8	15.2	79.0	30.0	61.5	31.7	29.8	MH/A-7-5	95.4	22.6	19	12
B21 Bulk	1.0	13.0	86.0	20.7	52	24.2	27.8	CH	-	-	-	-
B-22 Bulk	1.3	20.6	78.1	22.3	54.0	24.6	29.4	CH/A-7-6	102.4	19.2	14.1	6.1
B-23 Bulk	12.0	31.2	56.8	21.0	47.6	22.8	24.8	CL/A-7-6	103.4	20.2	15.1	5.1
B-25 Bulk	8.7	26.6	64.7	21.7	50.4	30.1	20.3	MH	100.2	21.6	-	-
B-26 2-4	-	55.4	44.6	32.9	57.6	36.4	21.2	SM	-	-	-	-
B-27 Bulk	11.6	26.9	61.5	16.6	44.7	22.8	21.9	CL/A-7-6	109.6	15.6	8.4	5.4

Notes: AASHTO and Unified Soil Classification shown for CBR samples.

**Middle River Regional Jail
Summary of Soil Laboratory Test Results**

Sample I.D.	Sieve Analysis			Moisture Content	Atterberg Limits			Soil Classif.	Max Dry Density	Optimum Moisture Content	CBR	
	Gravel	Sand	Silt and Clay		Liquid Limit	Plastic Limit	Plasticity Index				Dry	Soaked
B-28 Bulk	-	-	-	20.9	-	-	-	-	-	-	-	-
B-29A 4-6	-	42.8	57.2	11.4	36.9	24.9	12.0	ML	-	-	-	-
B-30 Bulk	-	-	-	20.3	-	-	-	-	-	-	-	-
B-31 2-4	-	0.1	99.9	26.2	61.0	25.3	35.7	CH	-	-	-	-
B-31 4-6	-	34.1	65.9	27.0	47.4	28.1	19.3	ML	-	-	-	-
B-31 Bulk	-	-	-	25.0	-	-	-	-	-	-	-	-
B-34 Bulk	4.0	23.3	72.7	24.3	46.0	21.2	24.8	CL/A-7-6	106.6	19.0	15.0	6.0
B-36 Bulk	-	-	-	22.4	-	-	-	-	-	-	-	-
B-43 8-10	-	14.7	85.3	30.1	45.8	29.5	16.3	ML	-	-	-	-
B-47 6-8	2.2	65.0	35.0	28.1	51.4	31.1	20.3	SM	-	-	-	-
B-57 0-2	3.2	8.3	88.5	26.2	56.6	24.2	32.4	CH	-	-	-	-
B-62 2-4	3.5	54.6	41.9	19.7	46.2	25.3	20.9	SC	-	-	-	-

Notes: AASHTO and Unified Soil Classification shown for CBR samples.

**Middle River Regional Jail
Summary of Soil Laboratory Test Results**

Sample I.D.	Sieve Analysis			Moisture Content	Atterberg Limits			Soil Classif.	Max Dry Density	Optimum Moisture Content	CBR	
	Gravel	Sand	Silt and Clay		Liquid Limit	Plastic Limit	Plasticity Index				Dry	Soaked
B-64 0-2	-	33.8	66.2	20.8	36.2	21.6	14.6	CL	-	-	-	-
B-66 0-2	-	11.0	89.0	19.4	38.8	20.3	18.5	CL	-	-	-	-
B-72 0-2	-	24.3	75.7	26.6	62.0	32.8	29.2	MH	-	-	-	-
B-74 0-2	-	24.8	75.2	26.8	56.8	23.5	33.3	CH	-	-	-	-
B-77 0-2	-	-	-	18.7	-	-	-	-	-	-	-	-
B-77 2-4	-	-	-	38.3	-	-	-	-	-	-	-	-
B-77 4-6	-	-	-	32.9	-	-	-	-	-	-	-	-
B-77 8-10	-	72.1	27.9	15.0	41.7	26.2	15.5	SM	-	-	-	-
B-82 Bulk	-	-	-	23.4	-	-	-	-	-	-	-	-
B-83 Bulk	-	-	-	29.3	-	-	-	-	-	-	-	-
B-84 Bulk	0.3	14.8	84.9	24.3	41.8	19.3	22.5	CL/A-7-6	103.0	19.5	14.1	6.1
B-85 Bulk	-	-	-	36.2	-	-	-	-	-	-	-	-

Notes: AASHTO and Unified Soil Classification shown for CBR samples.

**Middle River Regional Jail
Summary of Soil Laboratory Test Results**

Sample I.D.	Sieve Analysis			Moisture Content	Atterberg Limits			Soil Classif.	Max Dry Density	Optimum Moisture Content	CBR	
	Gravel	Sand	Silt and Clay		Liquid Limit	Plastic Limit	Plasticity Index				Dry	Soaked
B-101 2-4	-	14.9	85.1	28.0	71.7	35.0	36.7	MH	-	-	-	-
B-101 4-6	-	-	-	34.1	-	-	-	-	-	-	-	-
B-101 6-8	-	-	-	33.8	-	-	-	-	-	-	-	-
B-101 8-10	-	-	-	38.6	-	-	-	-	-	-	-	-
B-101 13-15	3.4	30.6	66.0	55.5	58.0	28.3	29.7	CH	-	-	-	-
B-101 18-20	-	-	-	64.9	-	-	-	-	-	-	-	-
B-102 2-4	-	9.3	90.7	26.3	54.8	26.4	28.4	CH	-	-	-	-
B-102 13-15	-	64.4	35.6	47.6	57.9	36.1	21.8	SM	-	-	-	-

Notes: AASHTO and Unified Soil Classification shown for CBR samples.

Moisture - Density Relationship (Proctor Method)

Project Name: Middle River Regional Jail

Project No.: 03.963.003

Material Description: Tan Brown Elastic silt with sand, MH

Material Source: B19

Depth: 0-5 ft

Proctor No.: 3070

Date: 01/23/03

Test Method: ASTM D-698-A

Maximum Dry Density (PCF): 95.8

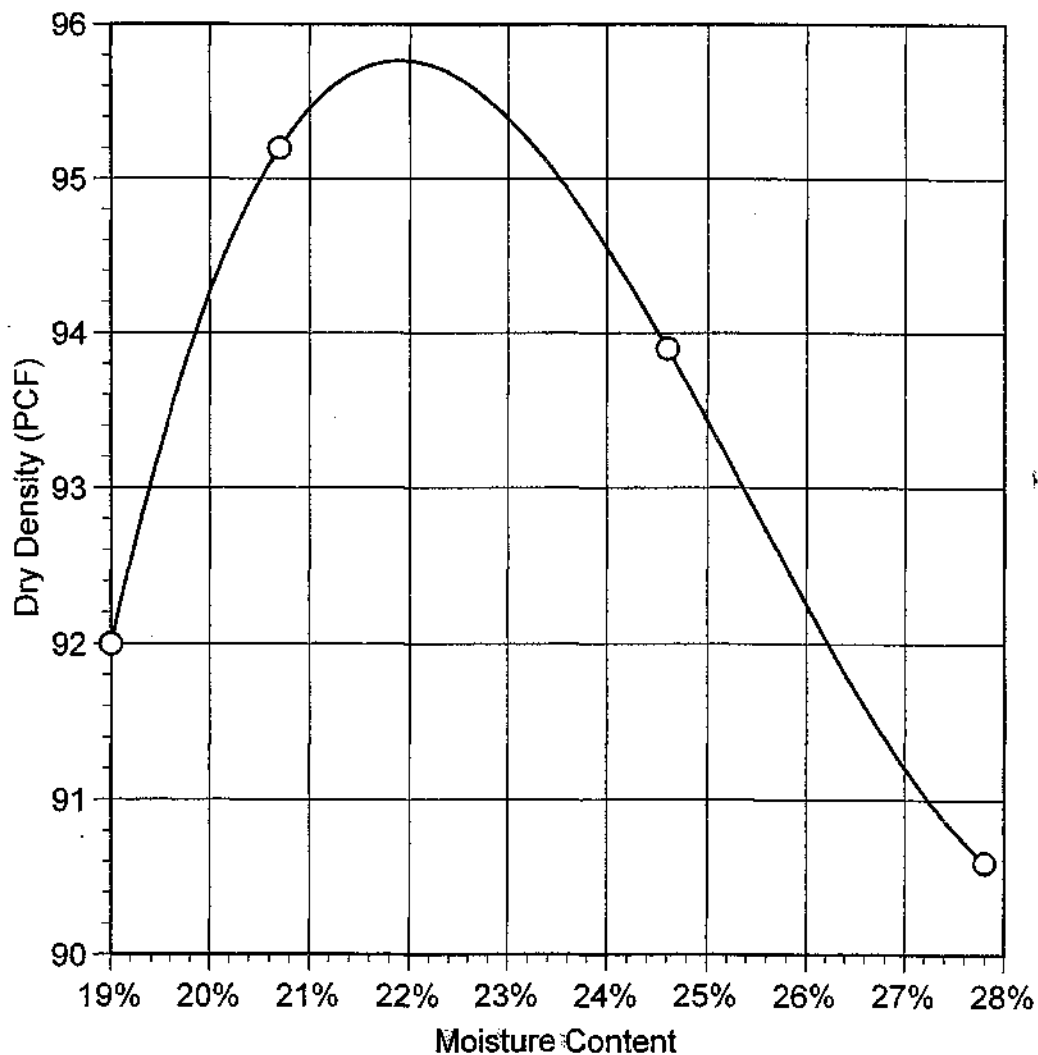
Optimum Moisture Content: 21.8%

Natural Moisture (%): 36.7

Liquid Limit: 64.1

Plasticity Index: 32.6

% Passing # 200 Sieve: 71.4



Moisture - Density Relationship (Proctor Method)

Project Name: Middle River Regional Jail

Proctor No.: 3068

Project No.: 03.963.003

Date: 01/23/03

Material Description: Brown Elastic silt with sand, MH

Material Source: B20

Depth: 0-5 ft

Test Method: ASTM D-698-A

Maximum Dry Density (PCF): 95.4

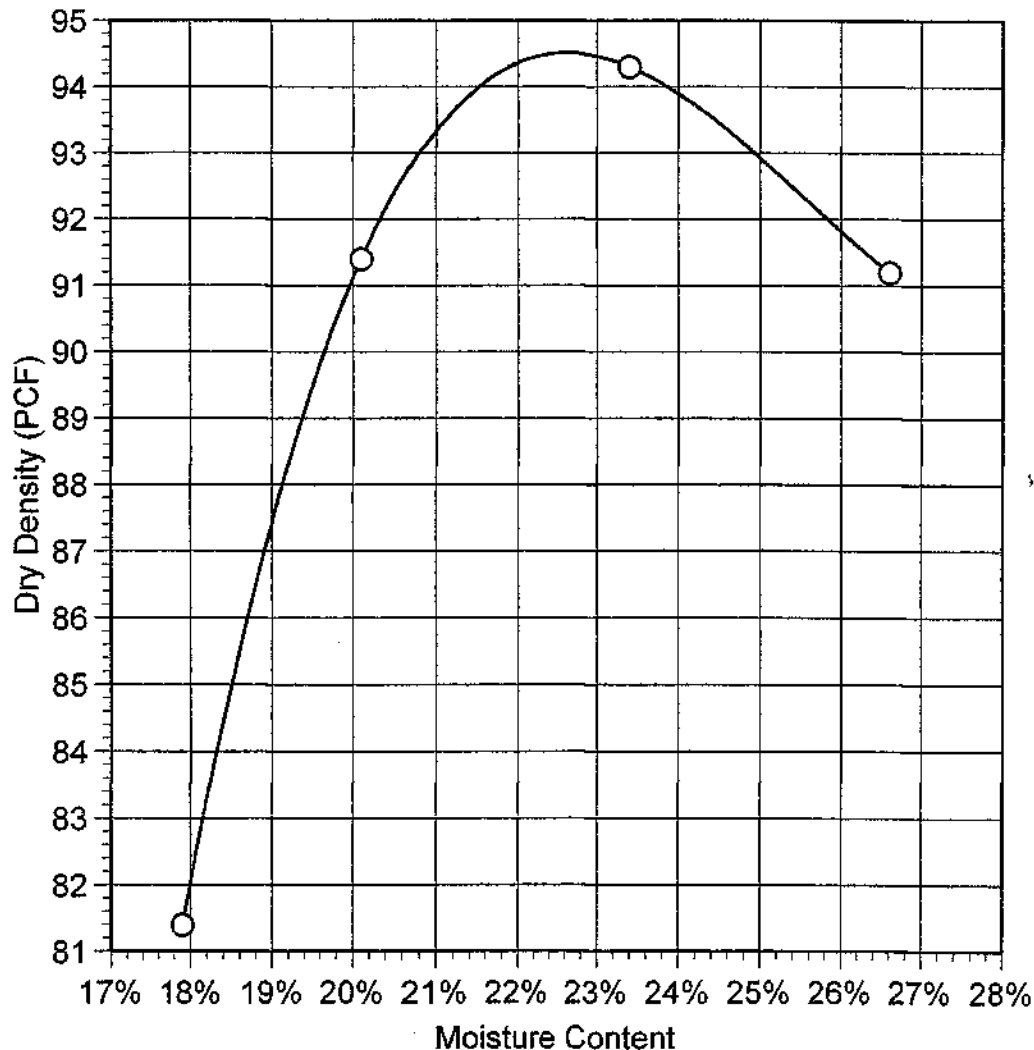
Optimum Moisture Content: 22.6%

Natural Moisture (%): 30.0

Liquid Limit: 61.5

Plasticity Index: 29.8

% Passing # 200 Sieve: 79.0



Moisture - Density Relationship (Proctor Method)

Project Name: Middle River Regional Jail

Project No.: 03.963.003

Material Description: Brown and Tan Brown Fat clay with sand, CH

Material Source: B22

Depth: 0-5 ft

Proctor No.: 3076

Date: 01/23/03

Test Method: ASTM D-698-A

Maximum Dry Density (PCF): 102.4

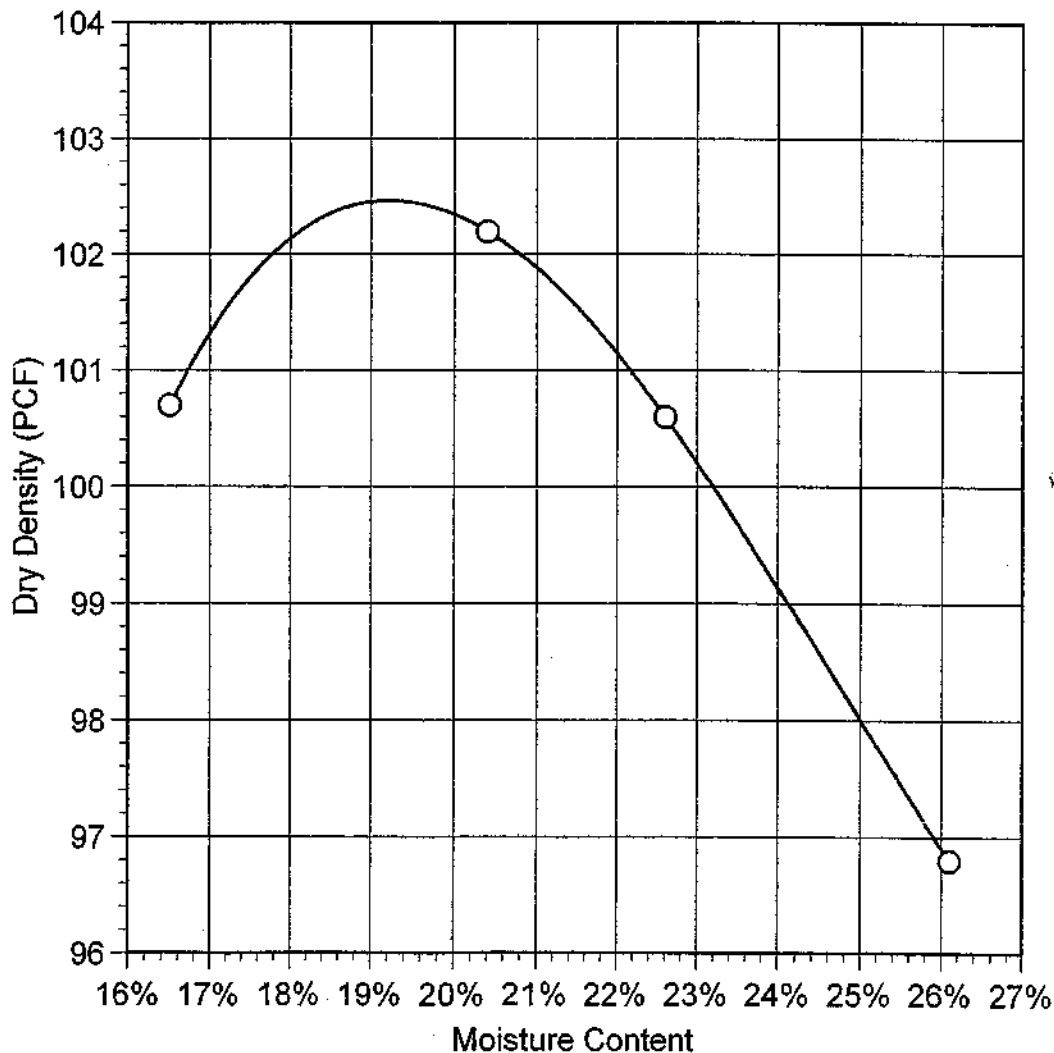
Optimum Moisture Content: 19.2%

Natural Moisture (%): 22.3

Liquid Limit: 54.0

Plasticity Index: 29.4

% Passing # 200 Sieve: 78.1



Moisture - Density Relationship (Proctor Method)

Project Name: Middle River Regional Jail

Project No.: 03.963.003

Material Description: Brown Sandy Lean clay, CL

Material Source: B23

Depth: 0-5 ft

Proctor No.: 3077

Date: 01/23/03

Test Method: ASTM D-698-A

Maximum Dry Density (PCF): 103.4

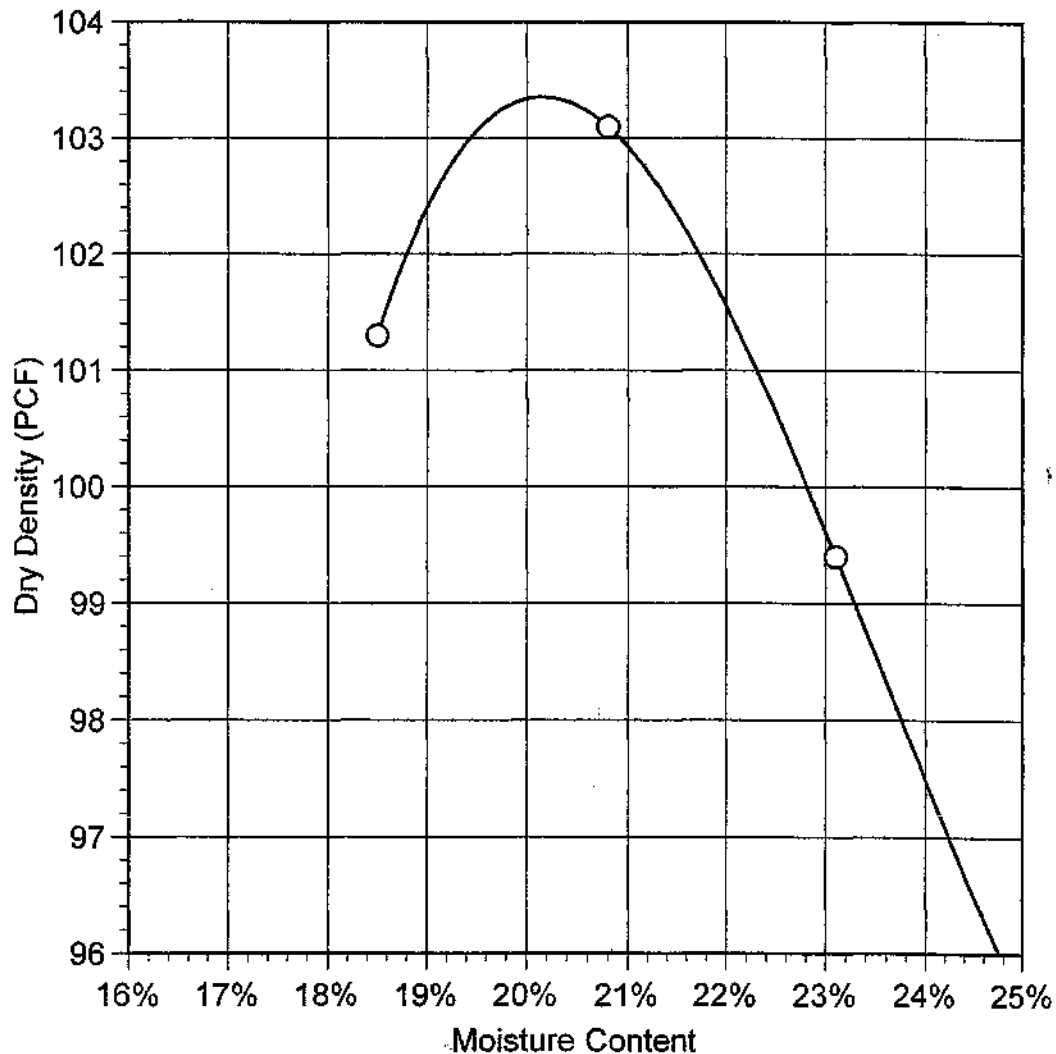
Optimum Moisture Content: 20.2%

Natural Moisture (%): 21.0

Liquid Limit: 47.6

Plasticity Index: 24.8

% Passing # 200 Sieve: 56.8



Moisture - Density Relationship (Proctor Method)

Project Name: Middle River Regional Jail

Project No.: 03.963.003

Material Description: Brown Sandy Elastic Silt, MH

Material Source: B25

Depth: 0-5 ft

Proctor No.: 3079

Date: 01/23/03

Test Method: ASTM D-698-A

Maximum Dry Density (PCF): 100.2

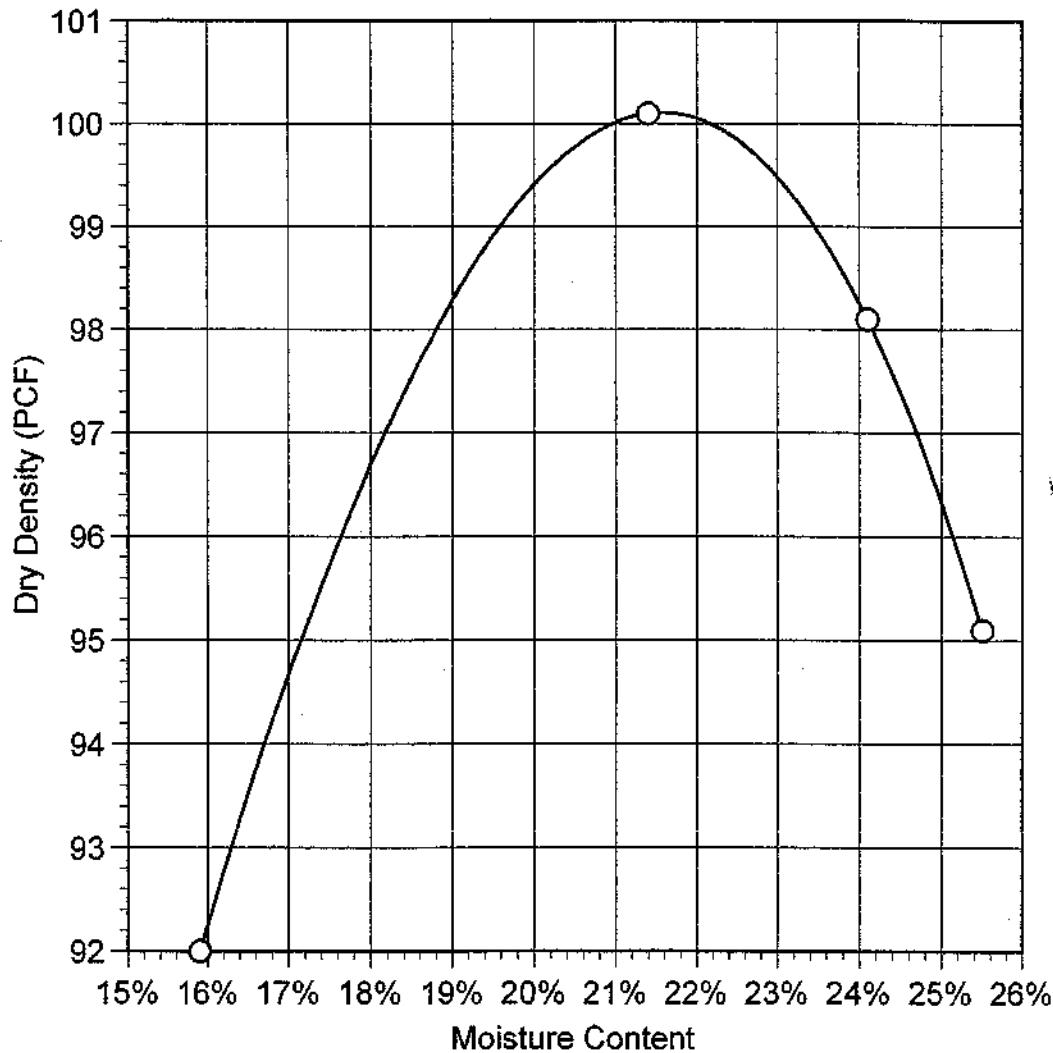
Optimum Moisture Content: 21.6%

Natural Moisture (%): 21.7

Liquid Limit: 50.4

Plasticity Index: 20.3

% Passing # 200 Sieve: 64.7



Moisture - Density Relationship (Proctor Method)

Project Name: Middle River Regional Jail

Project No.: 03.963.003

Material Description: Brown Sandy Lean Clay, CL

Material Source: B27

Depth: 0-5 ft

Proctor No.: 3069

Date: 01/23/03

Test Method: ASTM D-698-A

Maximum Dry Density (PCF): 109.6

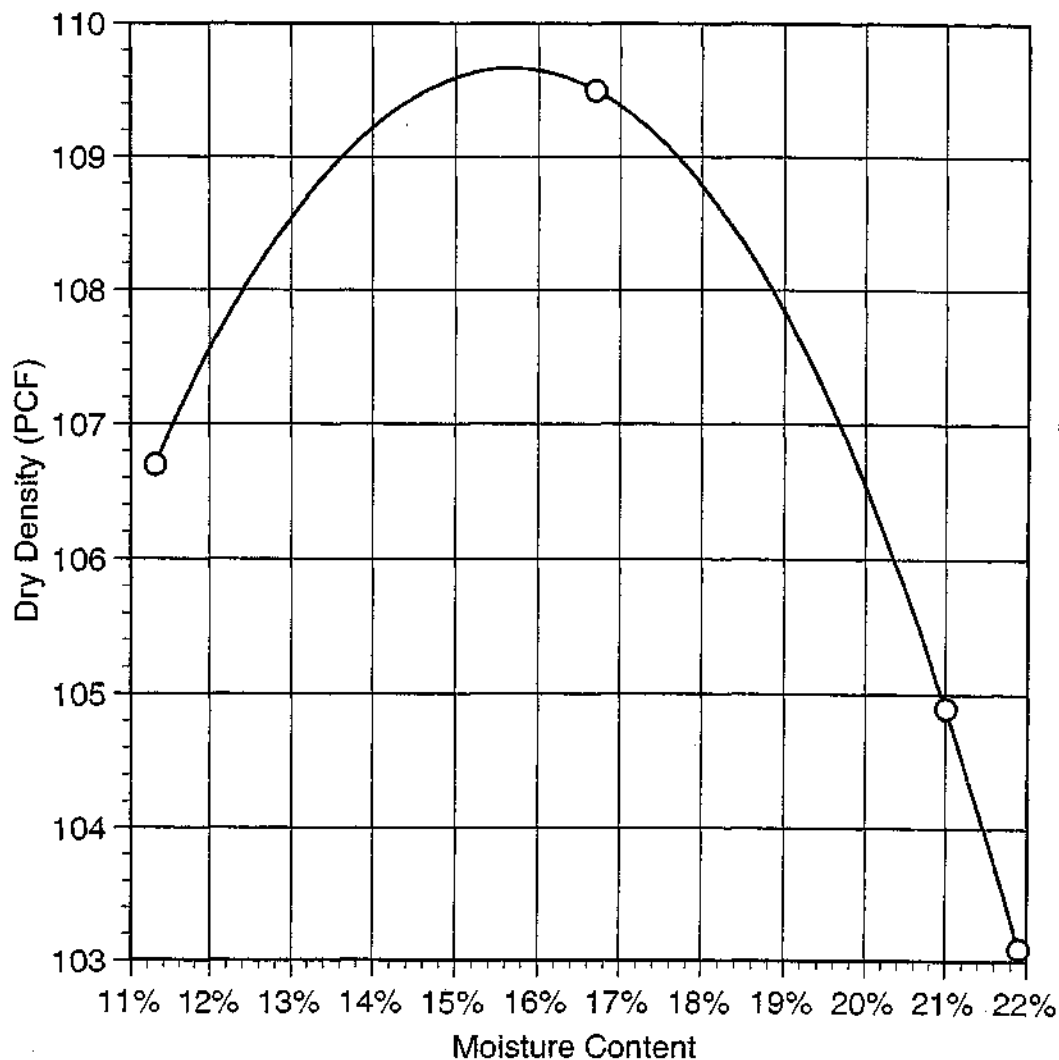
Optimum Moisture Content: 15.6%

Natural Moisture (%): 16.6

Liquid Limit: 44.7

Plasticity Index: 21.9

% Passing # 200 Sieve: 61.5



Moisture - Density Relationship (Proctor Method)

Project Name: Middle River Regional Jail

Project No.: 03.963.003

Material Description: Brown and Tan Lean Clay with sand, CL

Material Source: B34

Depth: 0-5 ft

Proctor No.: 3067

Date: 01/23/03

Test Method: ASTM D-698-A

Maximum Dry Density (PCF): 106.6

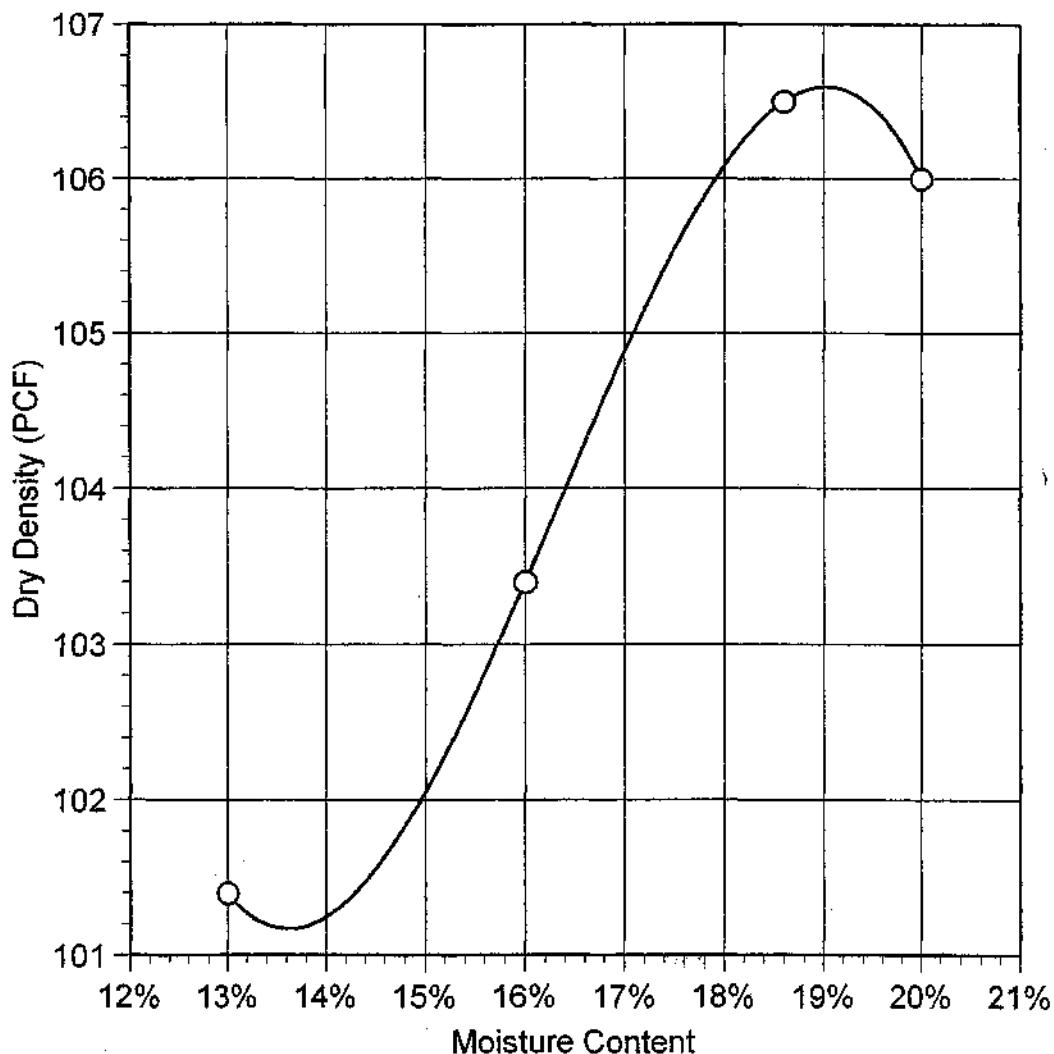
Optimum Moisture Content: 19.2%

Natural Moisture (%): 24.3

Liquid Limit: 46.0

Plasticity Index: 24.8

% Passing # 200 Sieve: 72.7



Moisture - Density Relationship (Proctor Method)

Project Name: Middle River Regional Jail
Project No.: 03.963.003
Material Description: Tan Brown Lean clay, CL
Material Source: B84
Depth: 0-5 ft

Proctor No.: 3072
Date: 01/23/03

Test Method: ASTM D-698-A

Maximum Dry Density (PCF): 103.0

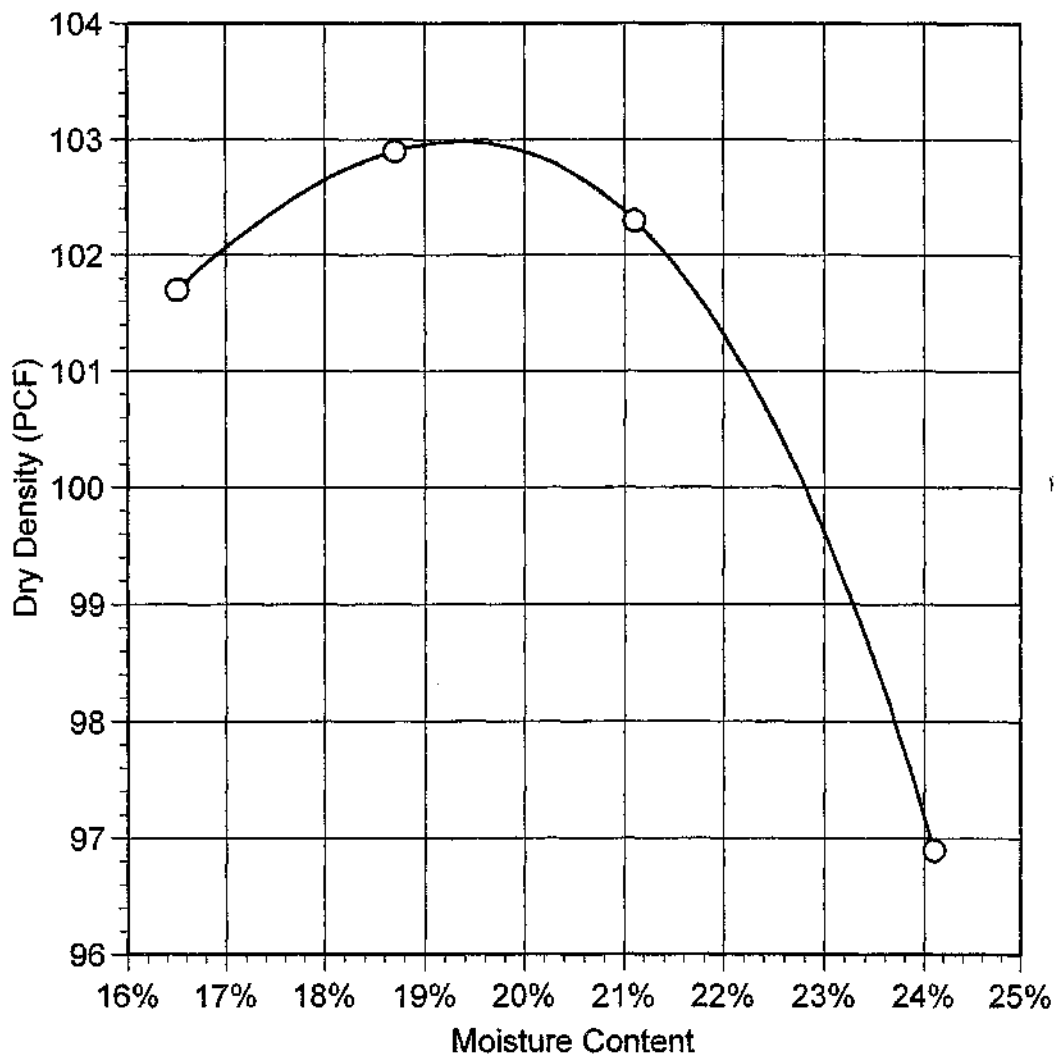
Optimum Moisture Content: 19.5%

Natural Moisture (%): 24.3

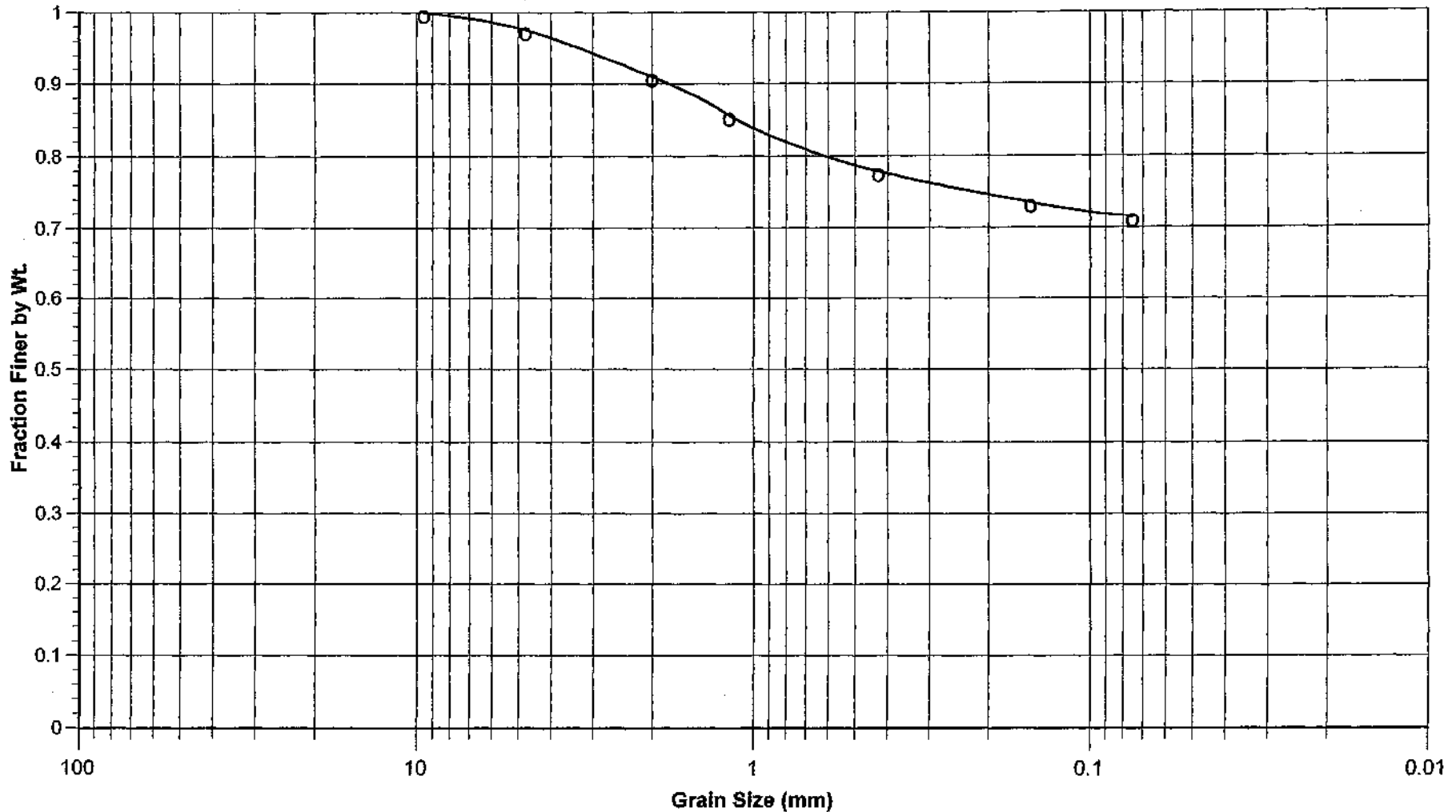
Liquid Limit: 41.8

Plasticity Index: 22.5

% Passing # 200 Sieve: 84.9



Grain Size Distribution



Cobble	Gravel		Sand			Silt or Clay	
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B-19	Bulk	Elastic Silt with sand, MH, Tan Brown		36.7	64.1	31.5	32.6



1650-A Mountain Road
Glen Allen, Virginia 23060

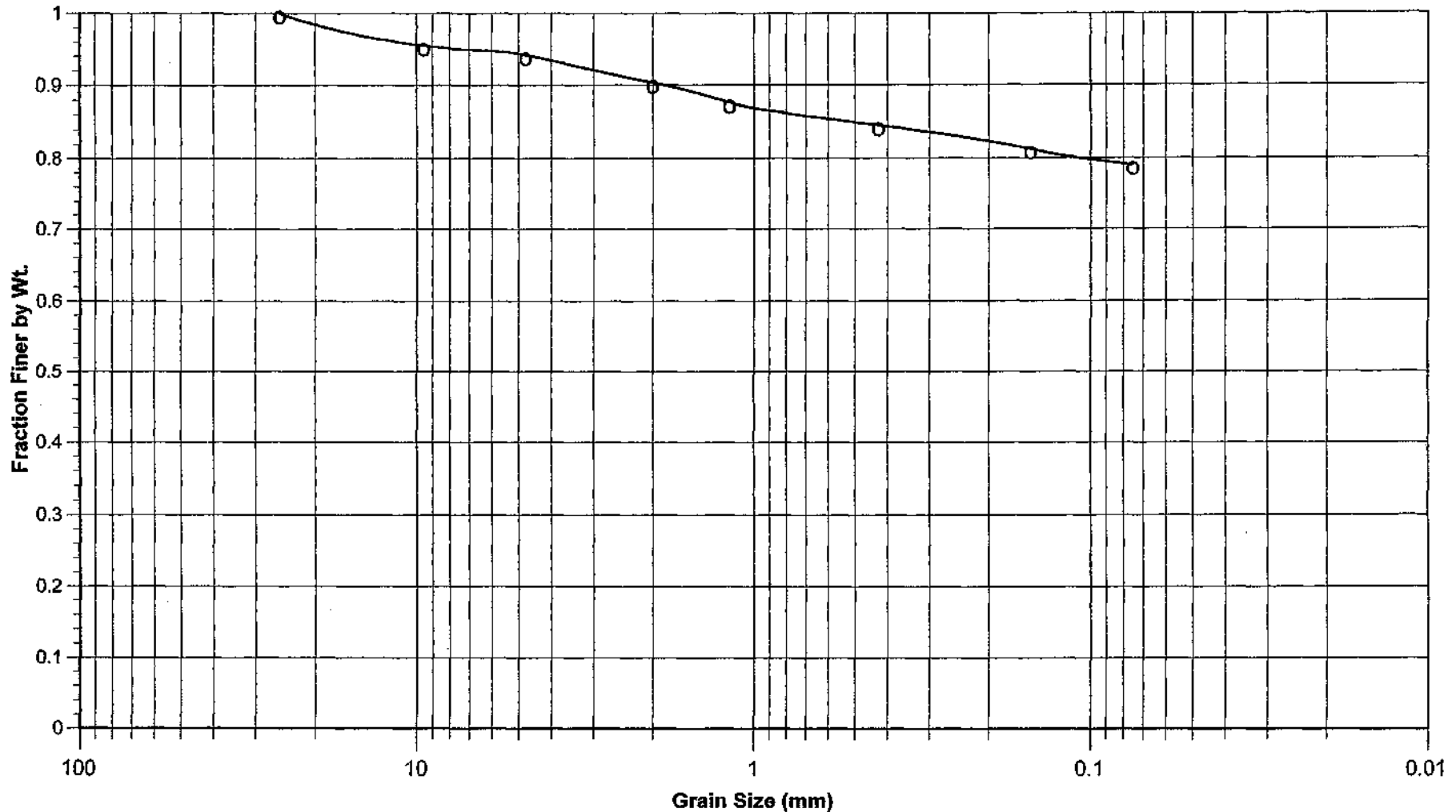
Zandino Engineering, Inc.

Project: Middle River Regional Jail


Location: Verona, VA

Date: January 23, 2003

Grain Size Distribution



Cobble	Gravel		Sand				Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B-20	Bulk	Elastic Silt with sand, MH,		30.0	61.5	31.7	29.8
		Strong Brown					

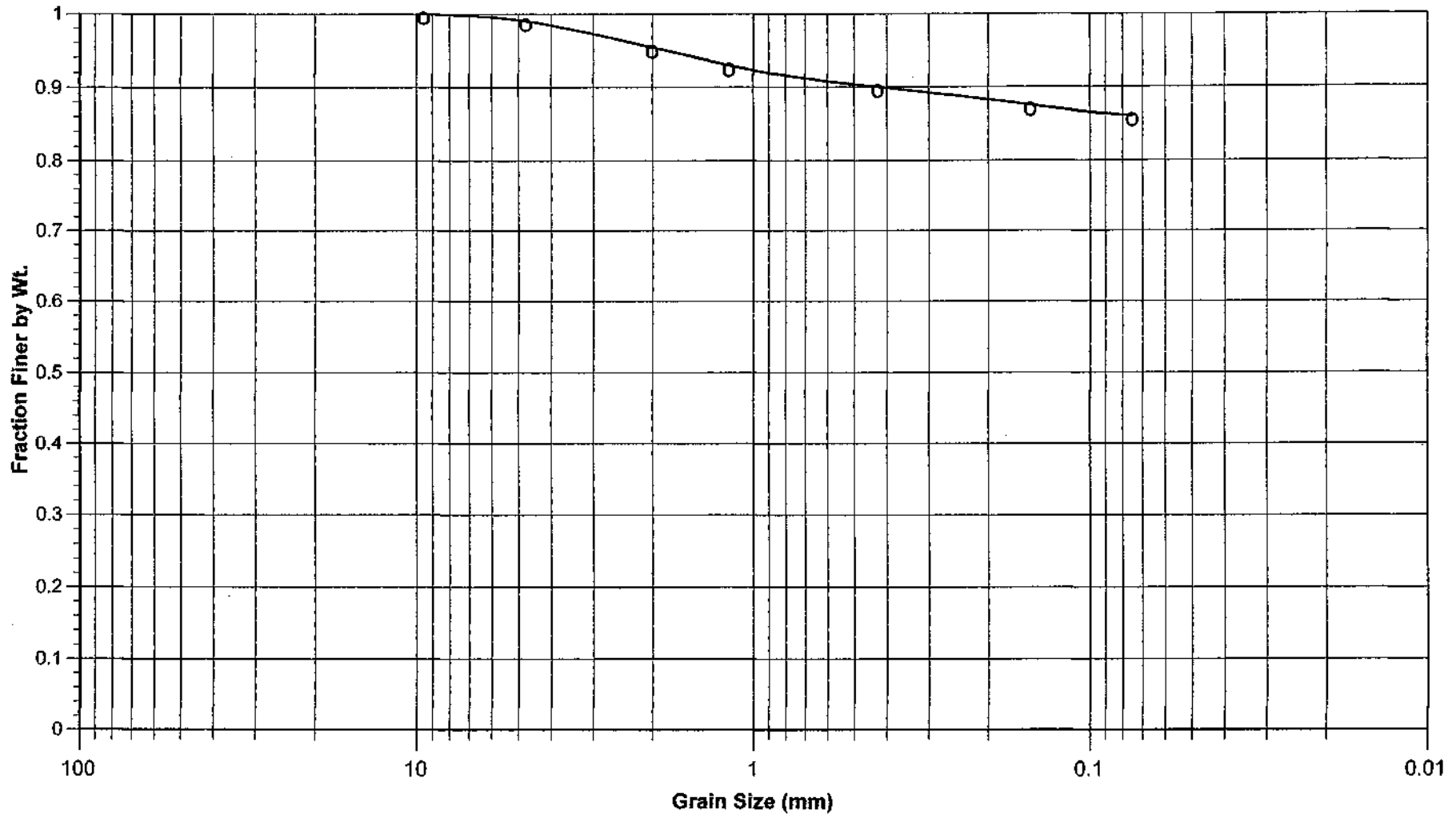


1650-A Mountain Road
Glen Allen, Virginia 23060
Zamudio Engineering, Inc.


Project: Middle River Regional Jail
Location: Verona, VA
Date: January 7, 2003

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Grain Size Distribution



Cobble	Gravel		Sand			Silt or Clay	
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B-21	Bulk	Fat Clay with sand, CH, Tan Brown		20.7 52.0	24.2	27.8	

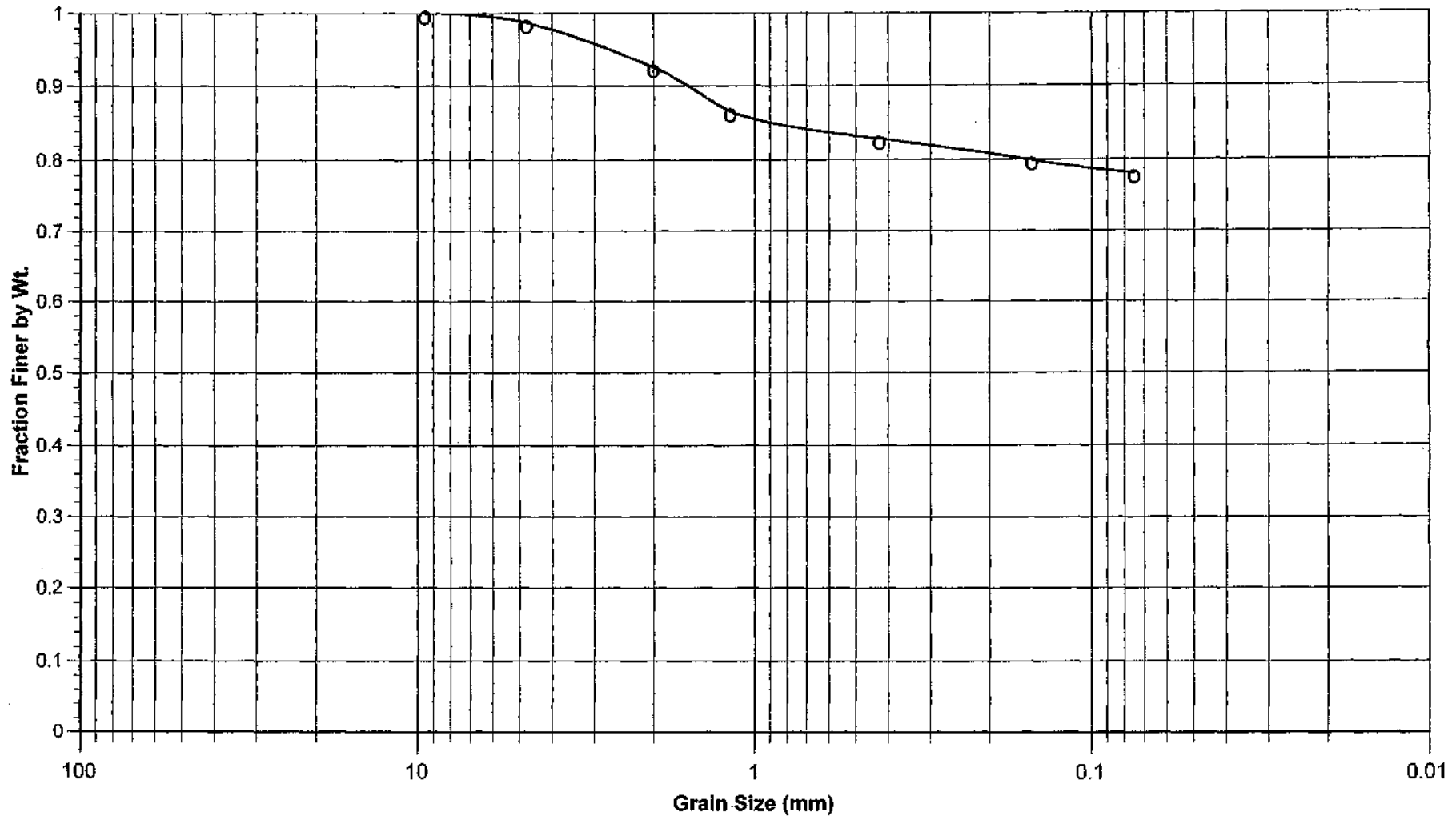


1650-A Mountain Road
Glen Allen, Virginia 23060


Project: Middle River Regional Jail
Location: Verona, VA
Date: January 7, 2003

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Grain Size Distribution



Cobble	Gravel		Sand			Silt or Clay	
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B-22	Bulk	Fat Clay with Sand, CH, Brown and tan Brown		22.3	54.0	24.6	29.4



Zawats Engineering, Inc.

1650-A Mountain Road
Glen Allen, Virginia 23060

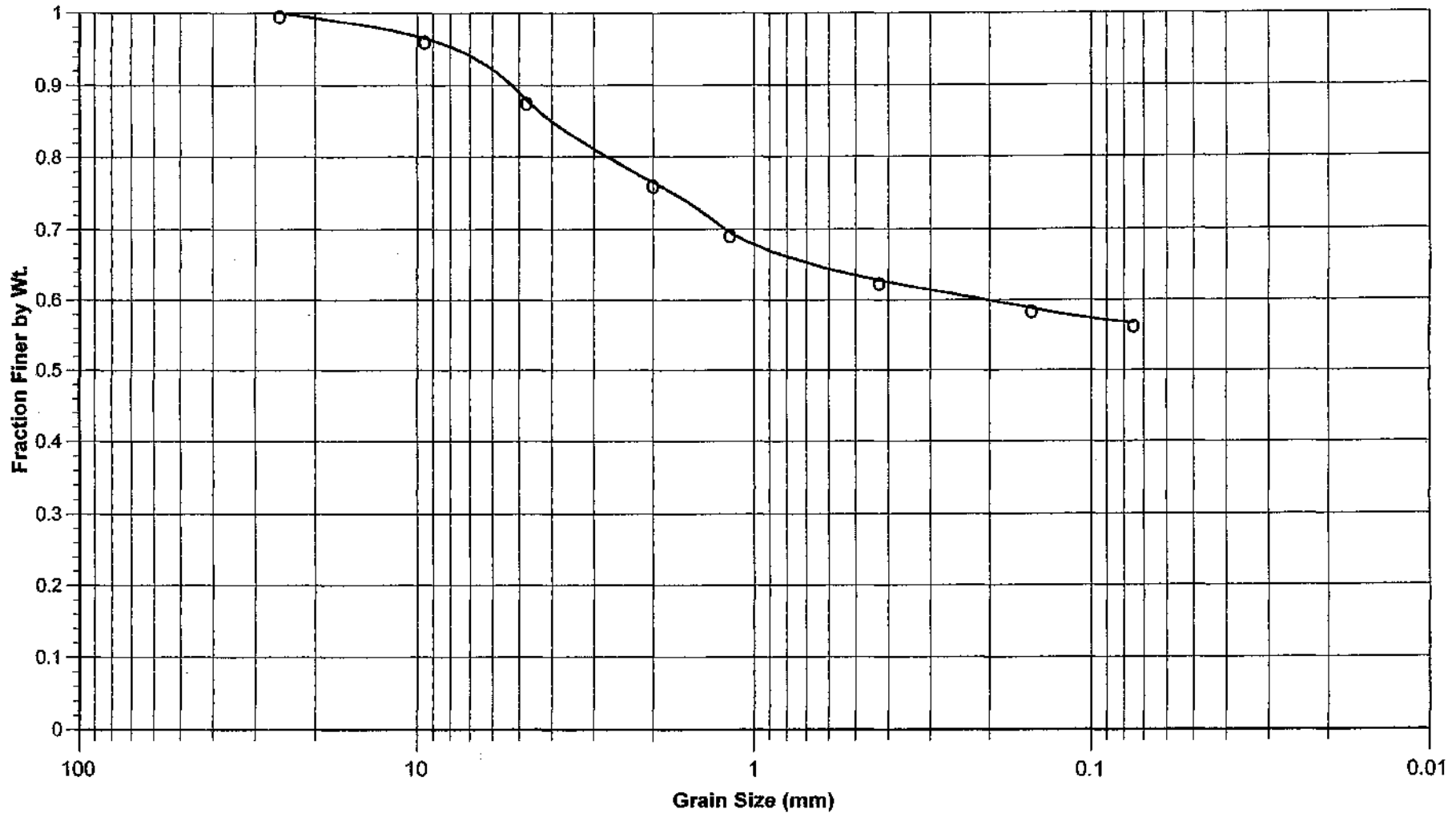
Project: Middle River Regional Jail

Location: Verona, VA

Date: January 23, 2003


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Grain Size Distribution



Cobble	Gravel		Sand			Silt or Clay	
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B-23	Bulk	Sandy Lean Clay, CL, Brown		21.0	47.6	22.8	24.8

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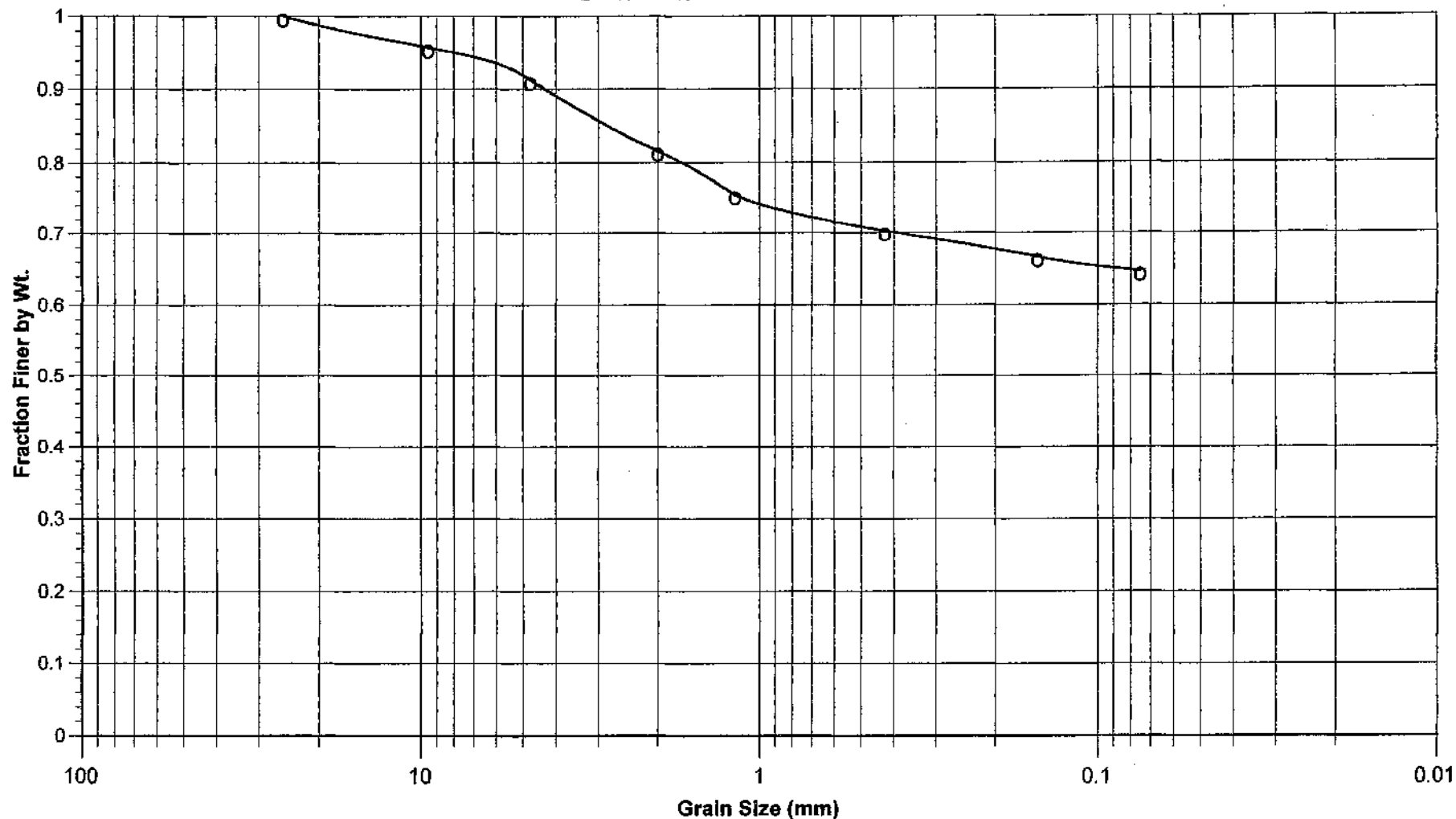
1650-A Mountain Road
Glen Allen, Virginia 23060
Zamudio Engineering, Inc.

Project: Middle River Regional Jail


Location: Verona, VA

Date: January 23, 2003

Grain Size Distribution



Cobble	Gravel		Sand				Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B-25	Bulk	Sandy Elastic Silt, MH, Brown		21.7	50.4	30.1	20.3


Zaruba Engineering, Inc.

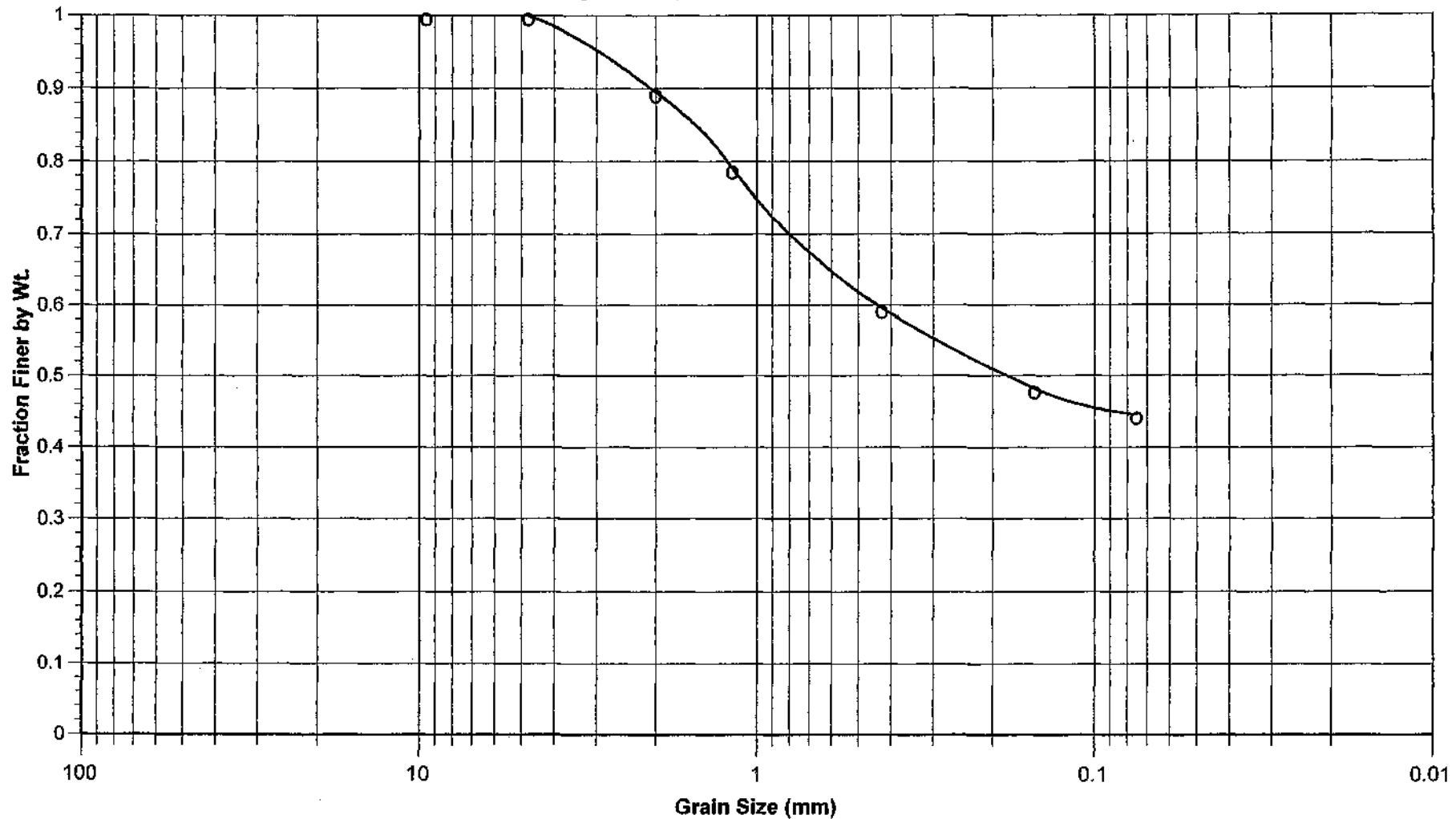
1650-A Mountain Road
Glen Allen, Virginia 23060

Project: Middle River Regional Jail


Location: Verona, VA

Date: January 23, 2003

Grain Size Distribution



Cobble	Gravel		Sand			Silt or Clay	
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B26	2-4	Silty Sand, SM, Brown		32.9	57.6	36.4	21.2

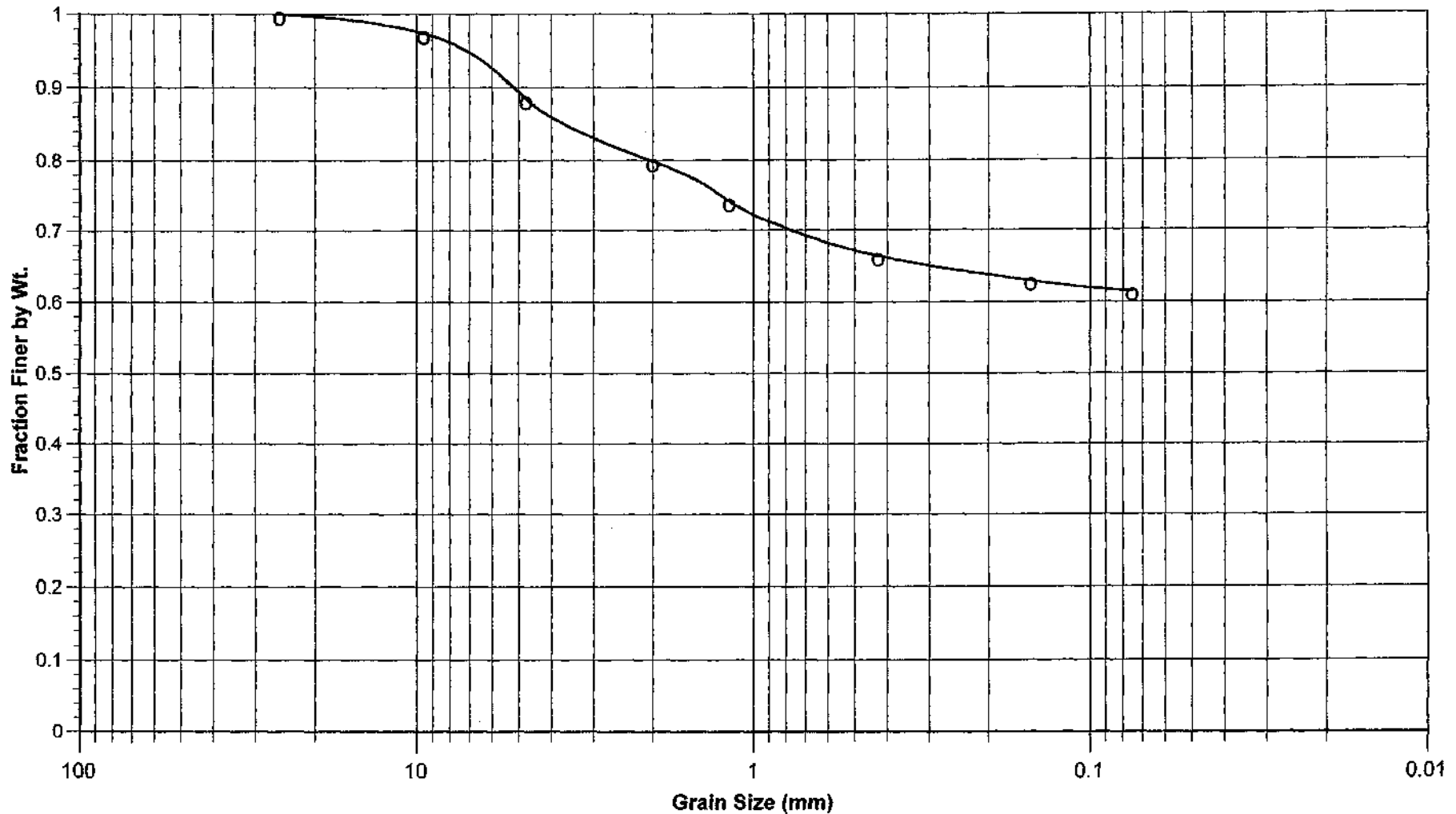


1650-A Mountain Road
Glen Allen, Virginia 23060
Zuniga Engineering, Inc.


Project: Middle River Regional Jail
Location: Verona, VA
Date: January 23, 2003

Page 330 of 408

Grain Size Distribution



Cobble	Gravel		Sand				Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B-27	Bulk	Sandy Lean Clay, CL, Brown		16.6	44.7	22.8	21.9



1650-A Mountain Road
Glen Allen, Virginia 23060
Zaruba Engineering, Inc.


Project: Middle River Regional Jail

Location: Verona, VA

Date: January 7, 2003

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Cobble	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	
Sample	Depth/Elev.	Classification	%Moist	LL	PL	PI
B31	2-4	Fat Clay, CH, yellow tan	26.2	61.0	25.3	35.7



1650-A Mountain Road
Glen Allen, Virginia 23060

Zachry Engineering, Inc.

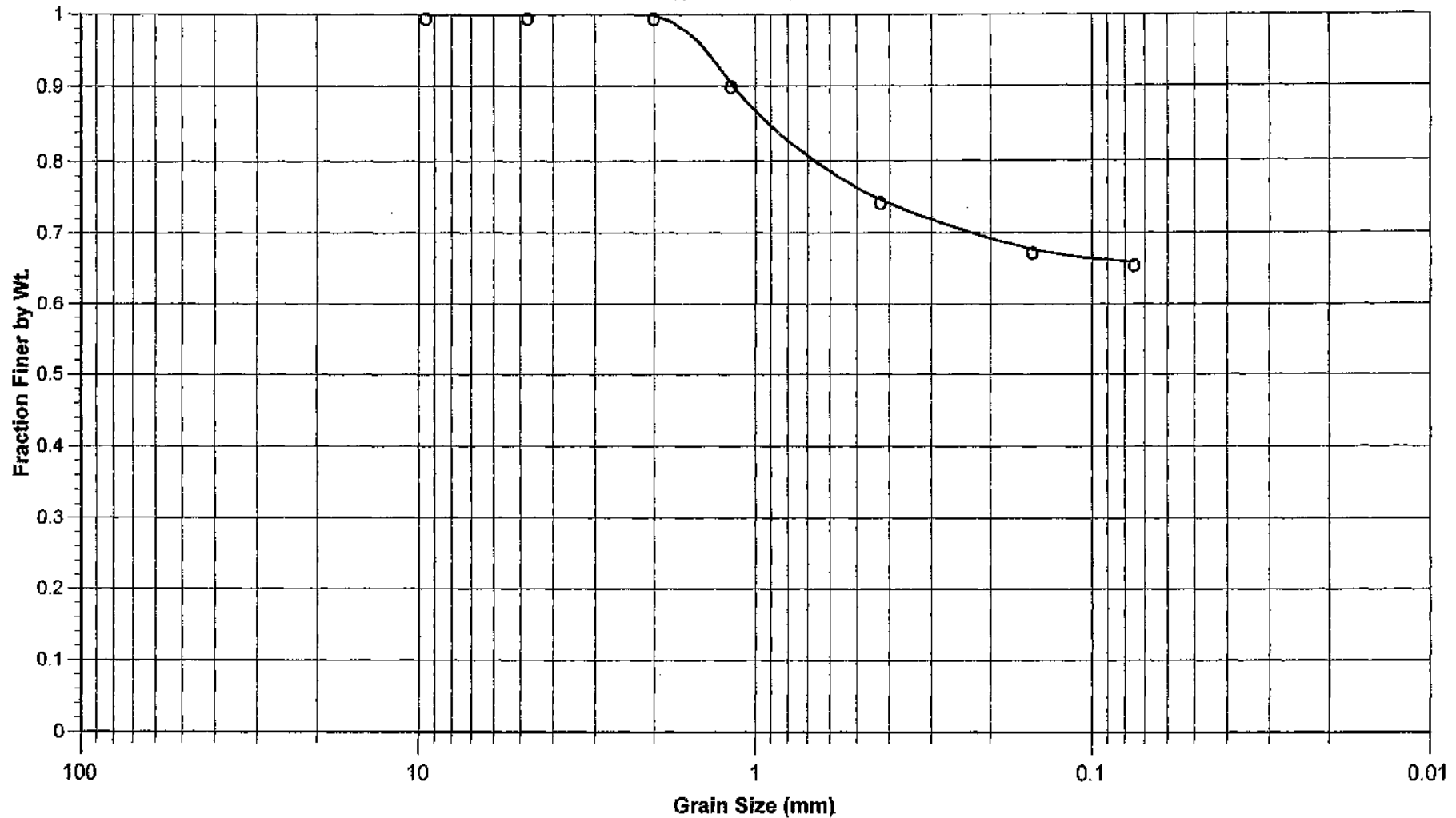
Project: Middle River Regional Jail

Location: Verona, VA

Date: January 23, 2003

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Grain Size Distribution



Cobble	Gravel		Sand			Silt or Clay	
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B31	4-6	Sandy Silt, ML, Gray and Tan		27.0	47.4	28.1	19.3



1650-A Mountain Road
Glen Allen, Virginia 23060

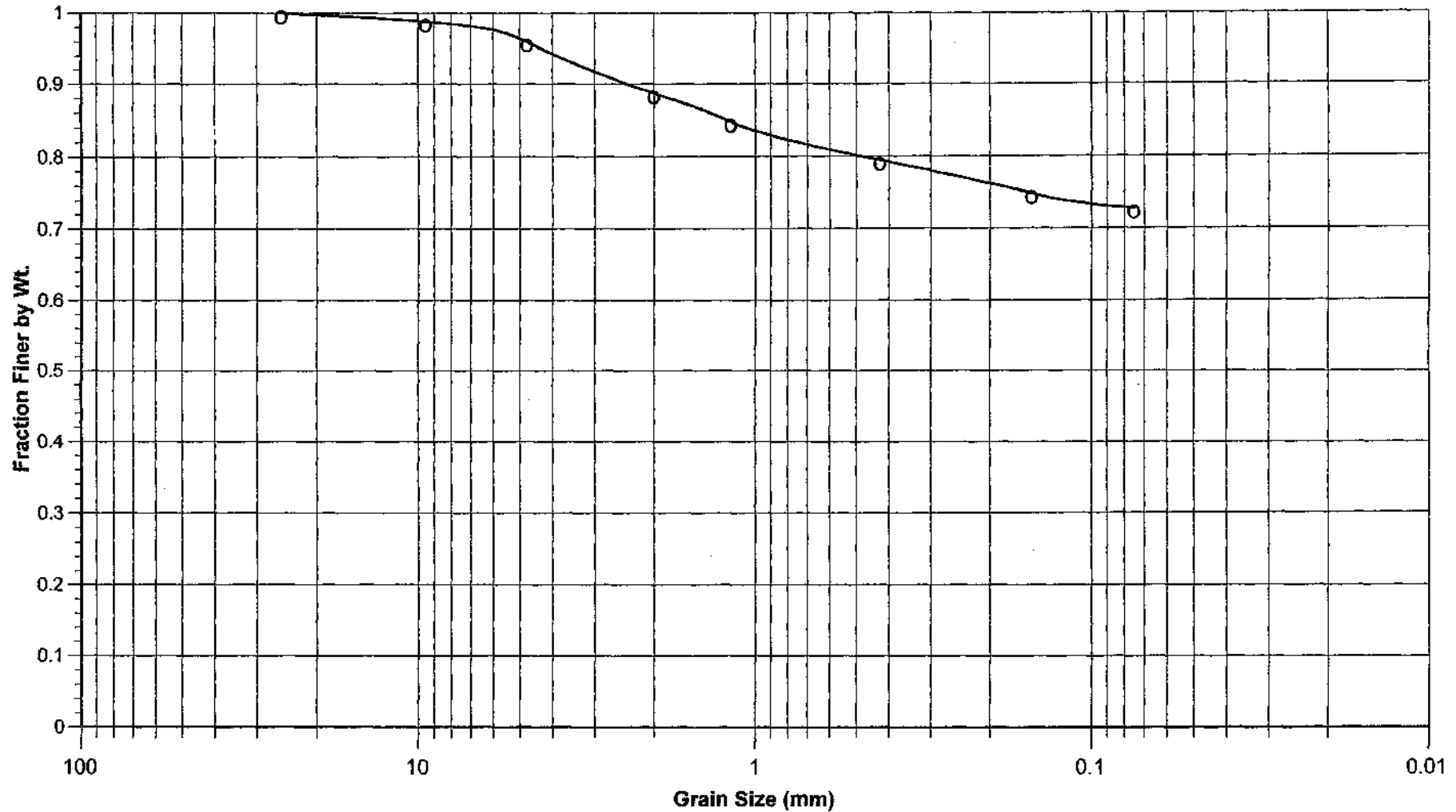
Zardas Engineering, Inc.

Project: Middle River Regional Jail


Location: Verona, VA

Date: January 23, 2003

Grain Size Distribution



Cobble	Gravel		Sand			Silt or Clay	
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B-34	Bulk	Lean Clay with Sand, CL, Brown		24.3	46.0	21.2	24.8



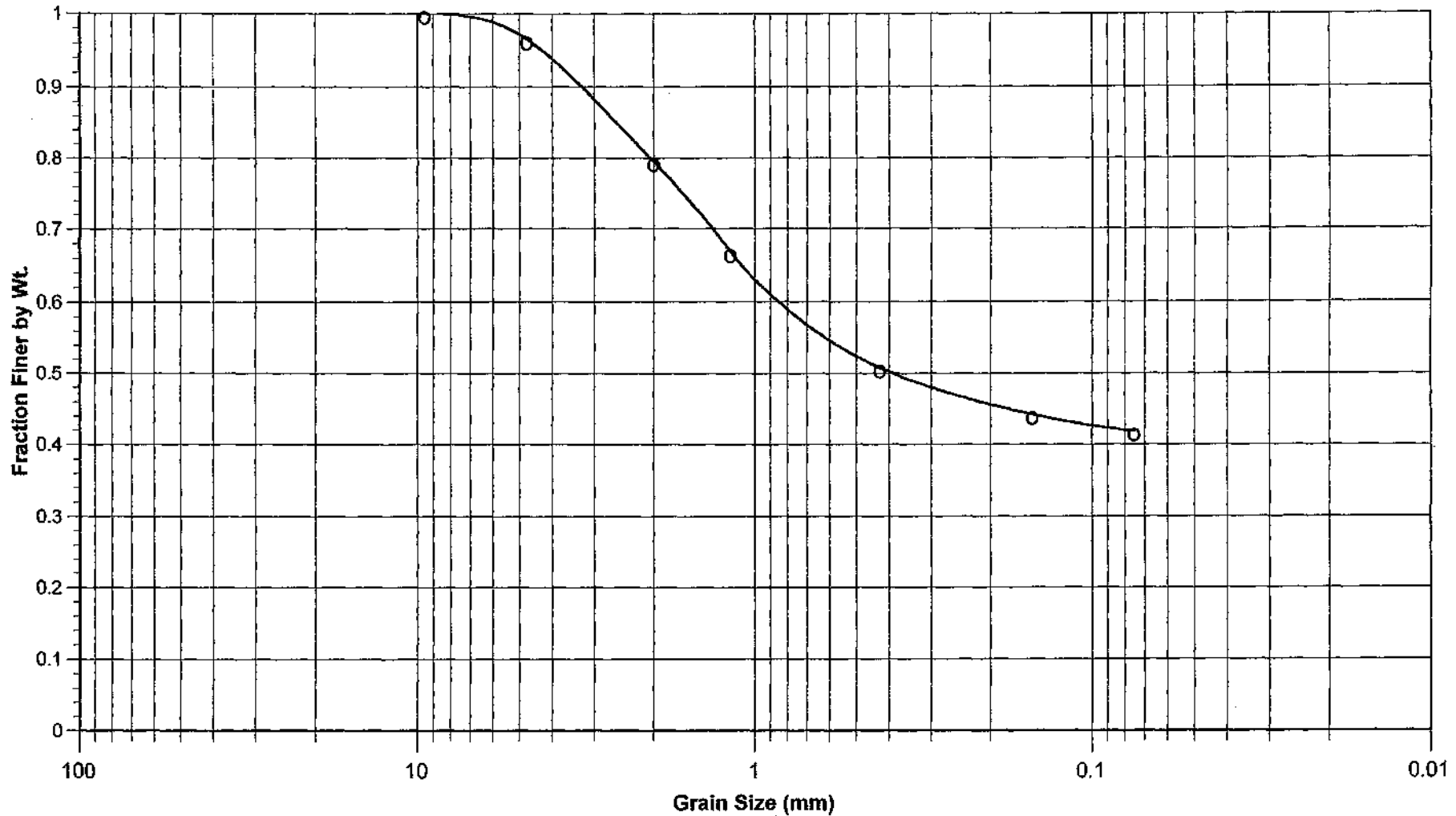
1650-A Mountain Road
Glen Allen, Virginia 23060
Zarado Engineering, Inc.

Project: Middle River Regional Jail

Location: Verona, VA

Date: January 7, 2003

Grain Size Distribution



Cobble	Gravel		Sand			Silt or Clay	
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B47	6-8	Silty sand, SM, contains rock fragments, brown and tan		28.1	51.4	31.1	20.3



1650-A Mountain Road
Glen Allen, Virginia 23060

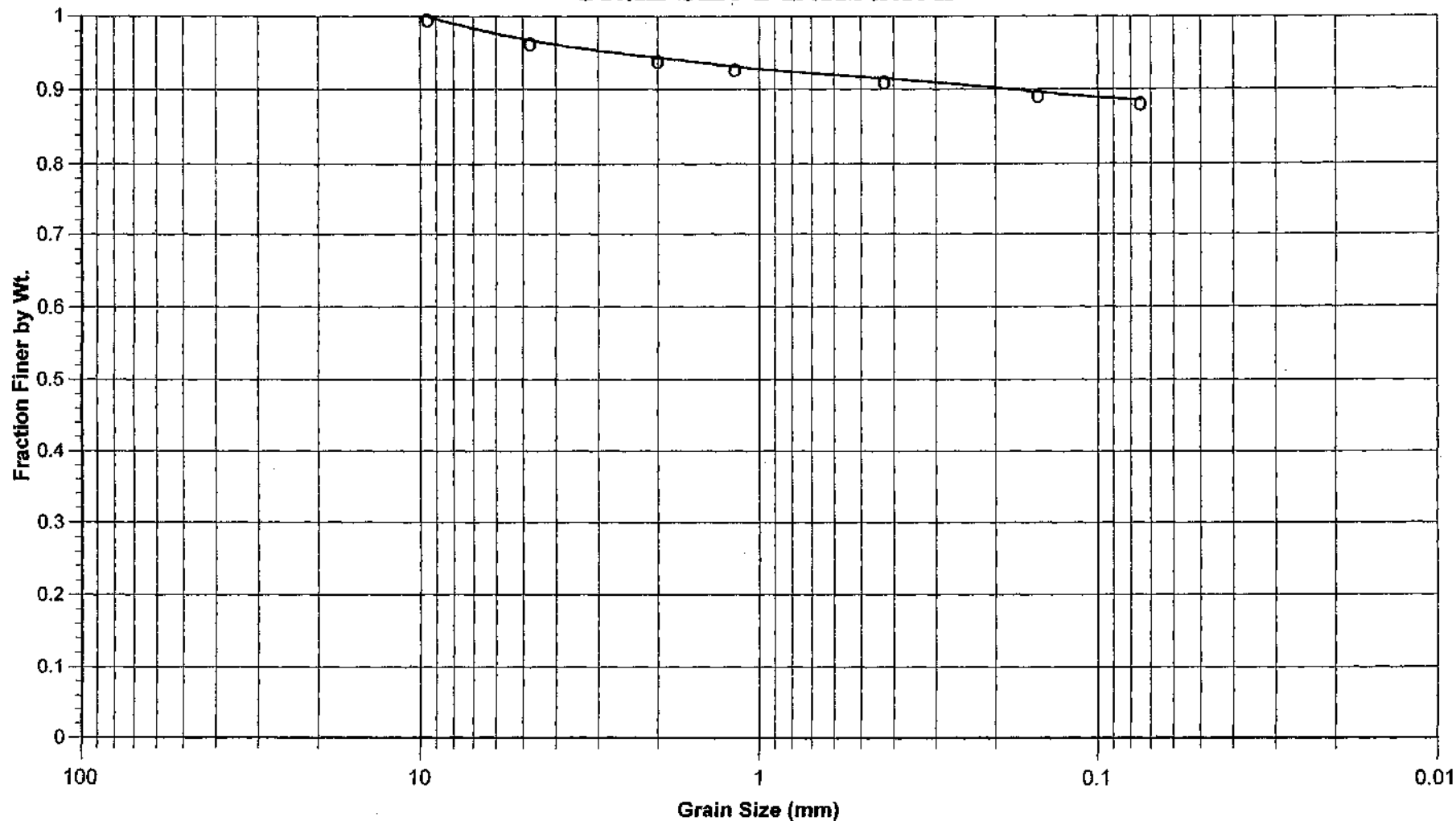
Zandco Engineering, Inc.

Project: Middle River Regional Jail


Location: Verona, VA

Date: January 23, 2003

Grain Size Distribution



Cobble	Gravel		Sand				Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B57	0-2	Fat Clay, CH, Red brown		26.2	56.6	24.2	32.4

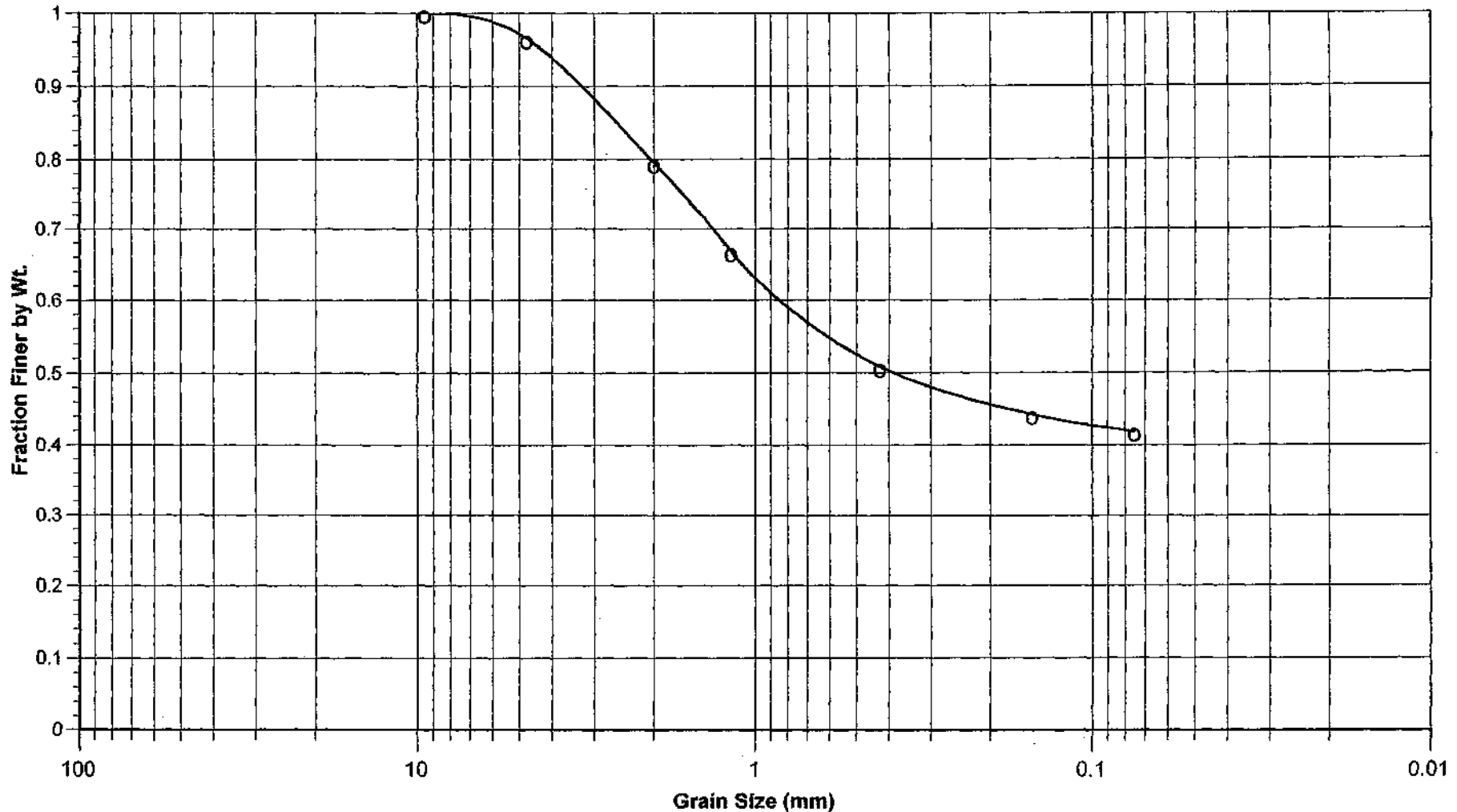


1650-A Mountain Road
Glen Allen, Virginia 23060


Project: Middle River Regional Jail
Location: Verona, VA
Date: January 23, 2003

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Grain Size Distribution



Cobble	Gravel		Sand			Silt or Clay	
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B62	2-4	Clayey sand, SC, contains rock fragments, brown and red		19.7	46.2	25.3	20.9



1650-A Mountain Road
Glen Allen, Virginia 23060
Zaruba Engineering, Inc.

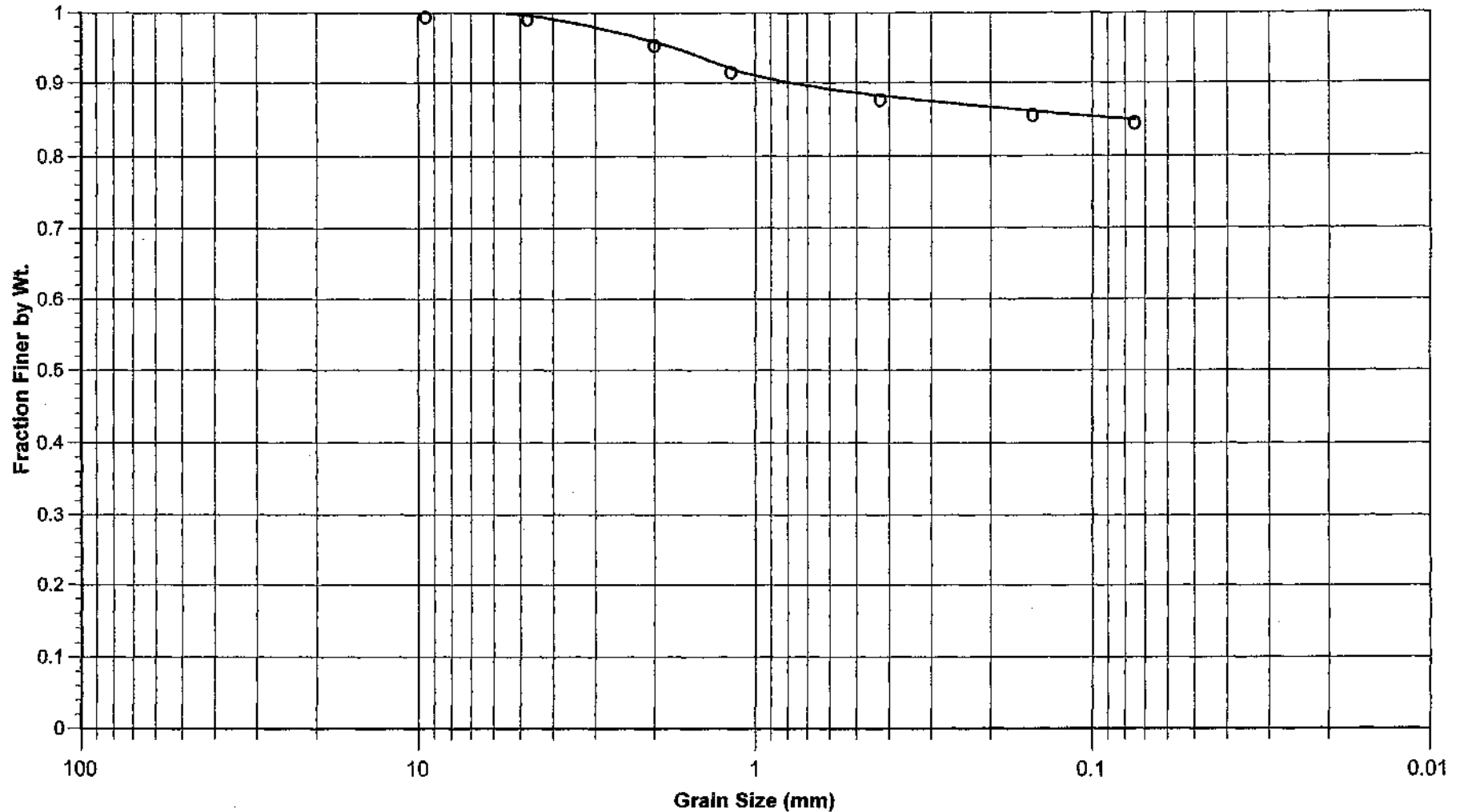
Project: Middle River Regional Jail

Location: Verona, VA


Date: January 23, 2003

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Grain Size Distribution



Cobble	Gravel		Sand			Silt or Clay	
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B-84	Bulk	Lean Clay, CL, Tan brown		24.3	41.8	19.3	22.5



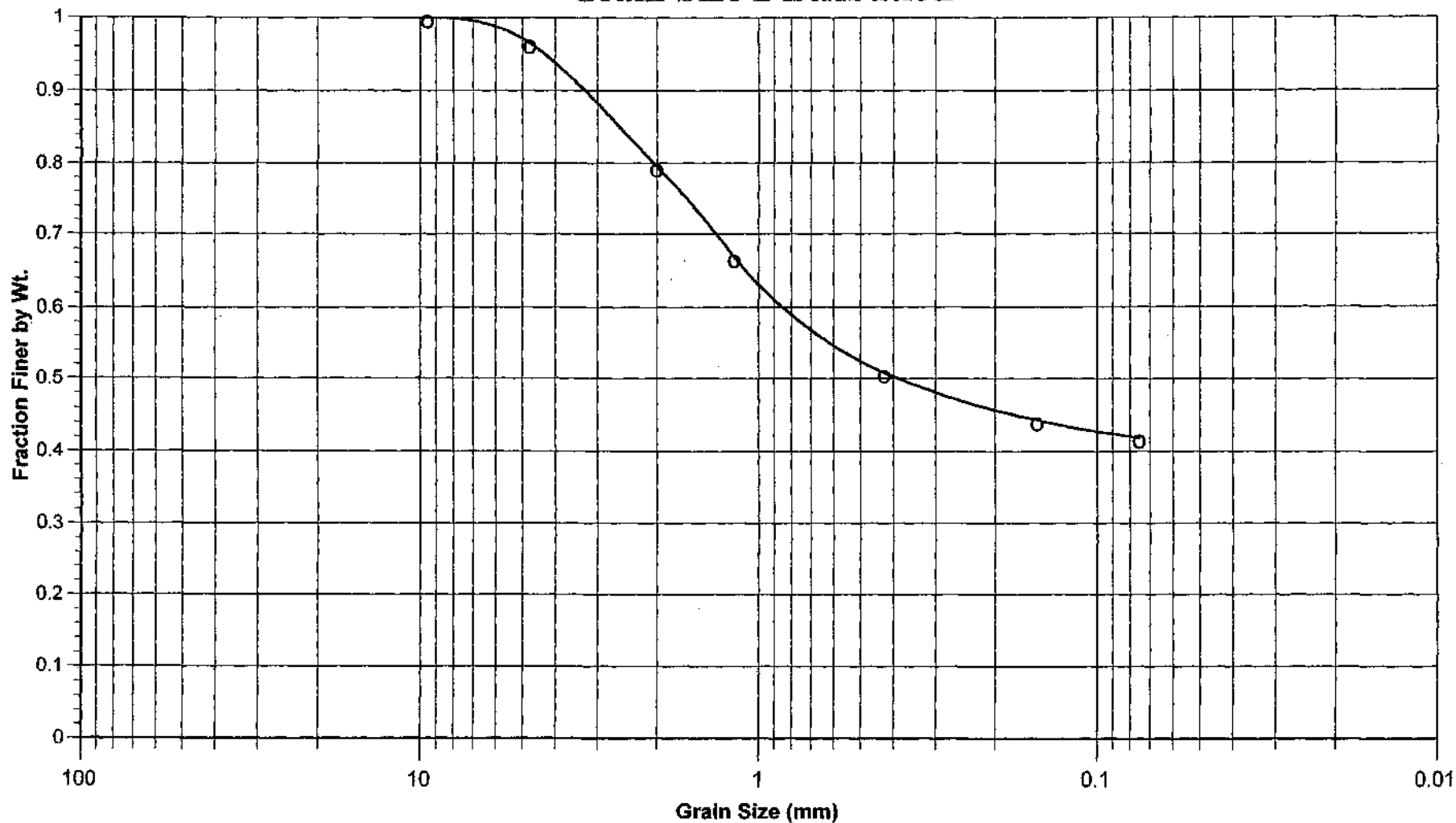
1650-A Mountain Road
Glen Allen, Virginia 23060

Project: Middle River Regional Jail


Location: Verona, VA

Date: January 23, 2003

Grain Size Distribution



Cobble	Gravel		Sand			Silt or Clay	
	Coarse	Fine	Coarse	Medium	Fine		
Sample	Depth/Elev.	Classification		%Moist	LL	PL	PI
B101	13-15	Sandy Fat Clay, CH, brown, grey, and black		55.5	58.0	28.3	29.7



1650-A Mountain Road
Glen Allen, Virginia 23060
Zarodin Engineering, Inc.

Project: Middle River Regional Jail

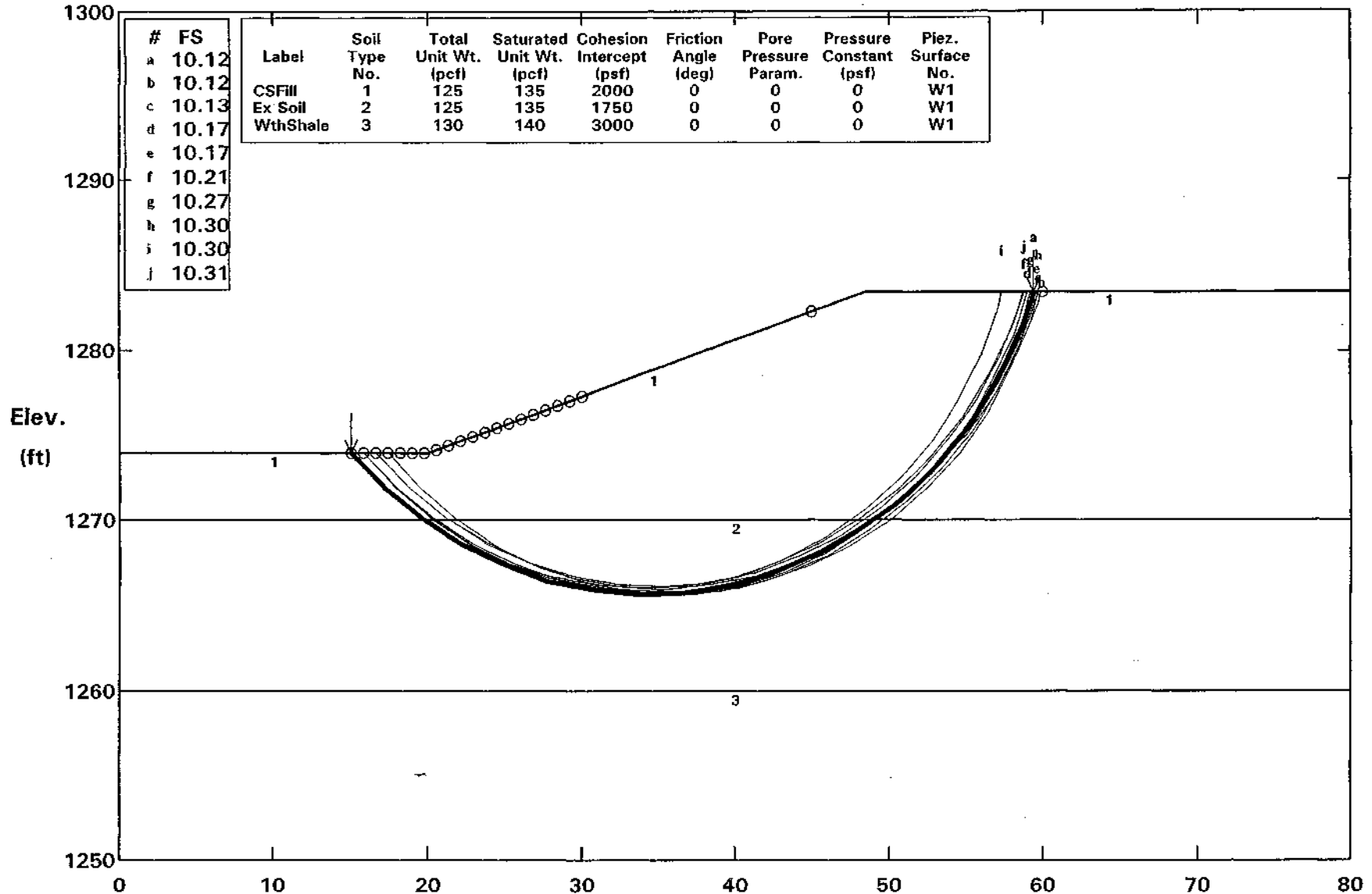
Location: Verona, VA

Date: January 23, 2003

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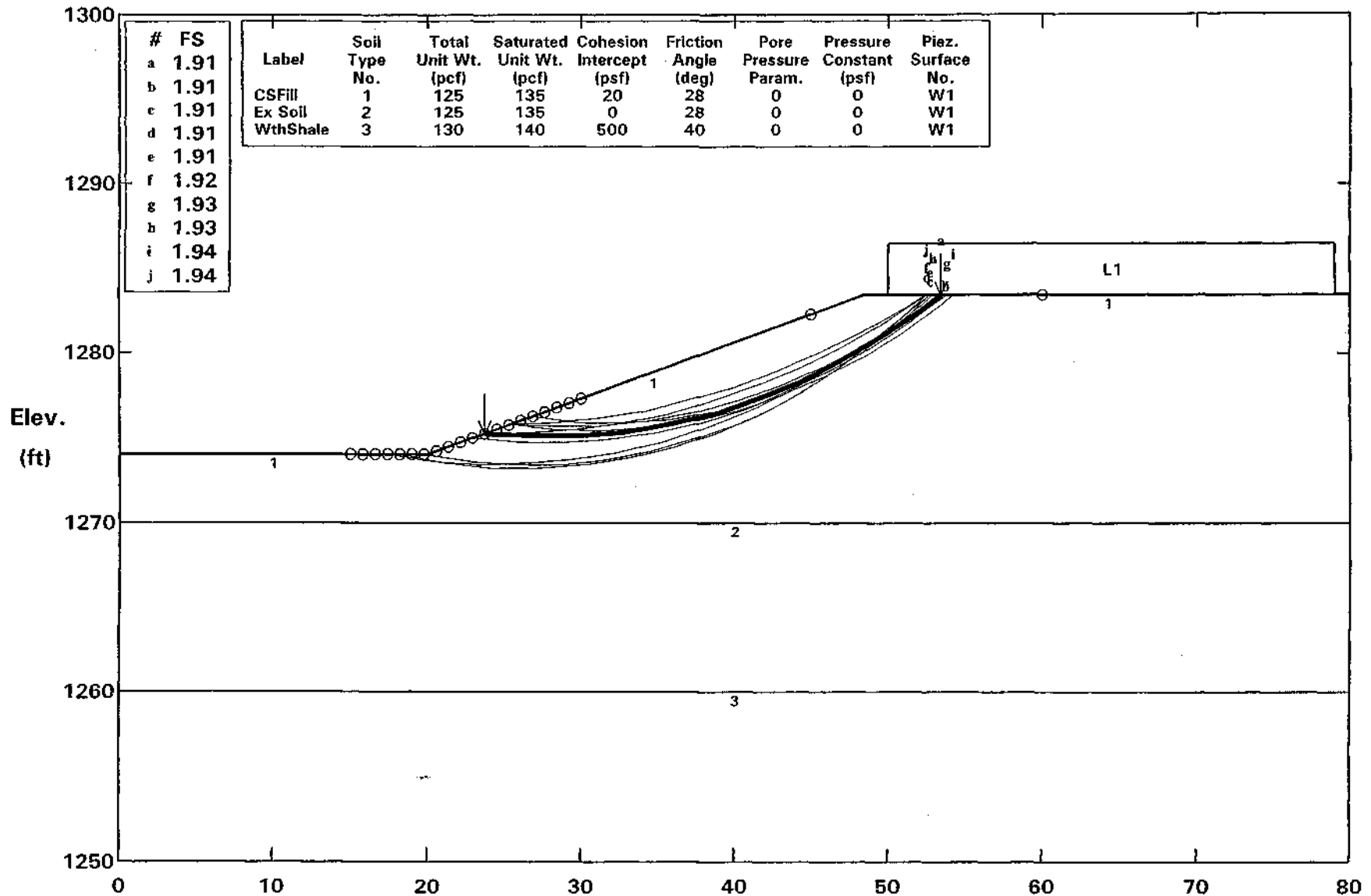
Middle River Regional Jail, Total Stress Cooling Tower

Ten Most Critical. C:EMB1.PLT By: RSH 01-29-03 4:20pm



STABL6H FSmin = 10.12 X-Axis (ft)
Factors Of Safety Calculated By The Modified Bishop Method

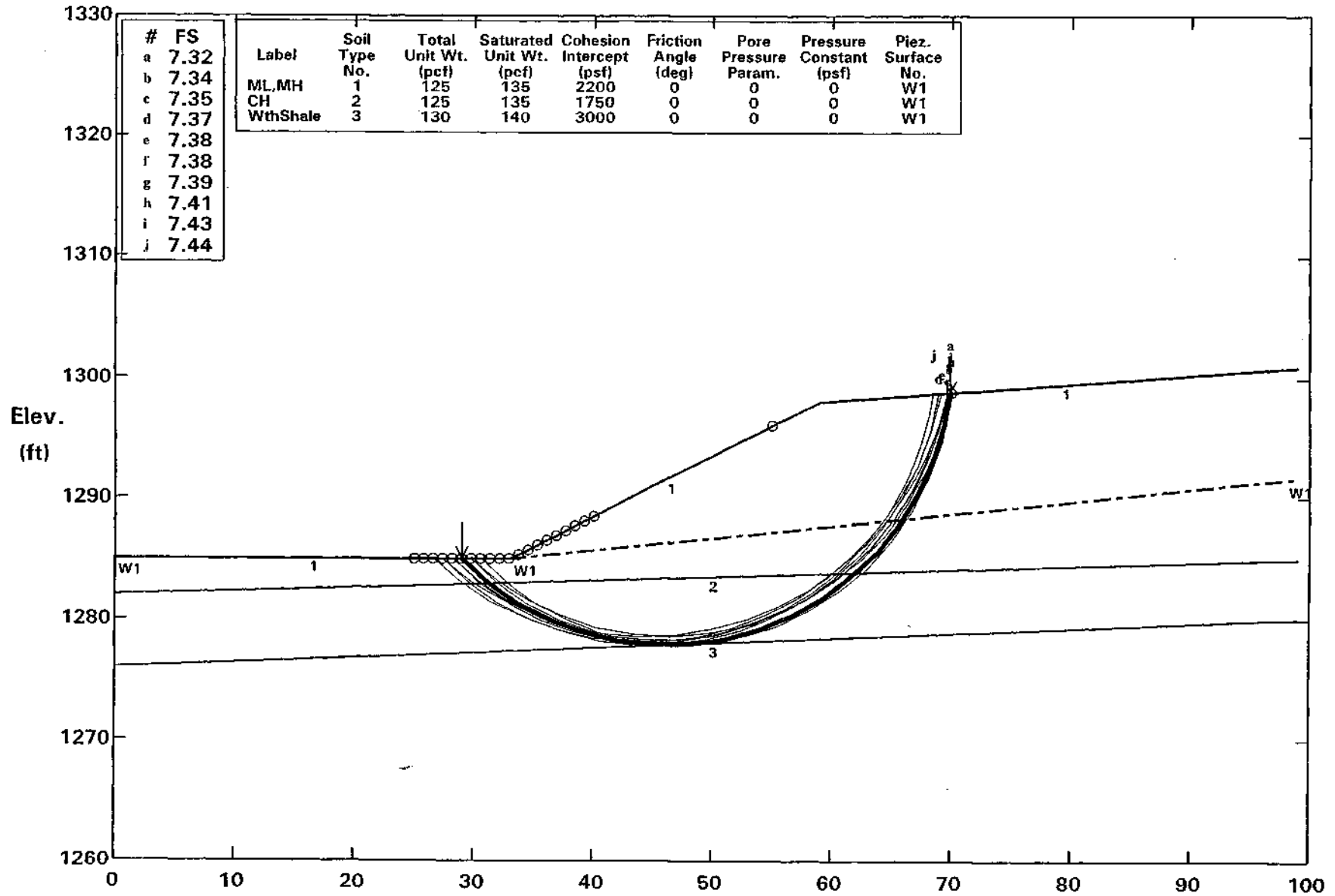
Middle River Regional Jail, Eff Stress Cooling Tower
Ten Most Critical. C:EMB2S.PLT By: RSH 01-29-03 4:21pm



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Factors Of Safety Calculated By The Modified Bishop Method

Middle River Regional Jail, Total Stress Station 58 + 85

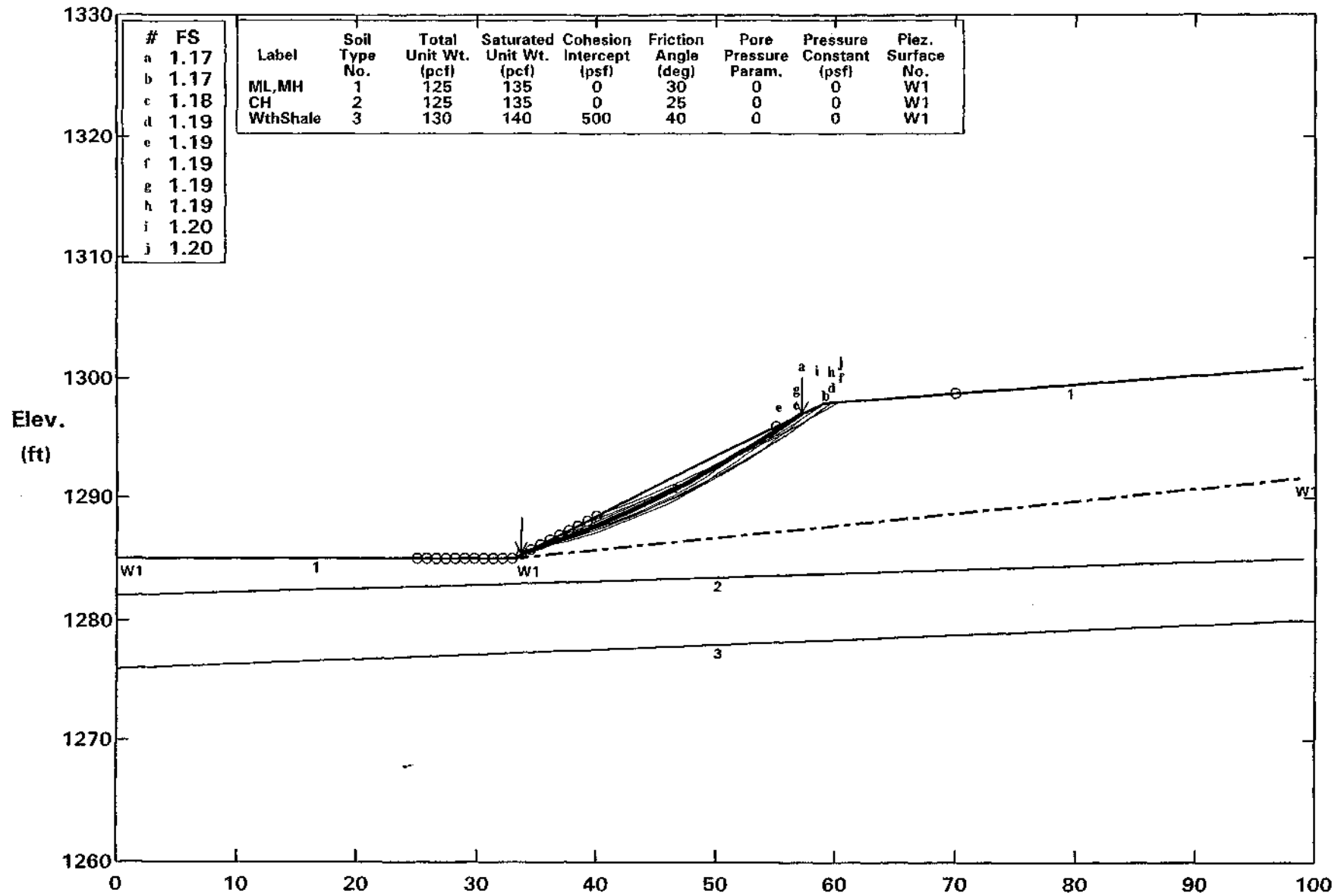
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Factors Of Safety Calculated By The Modified Bishop Method

Middle River Regional Jail, Eff Stress Station 58 + 85

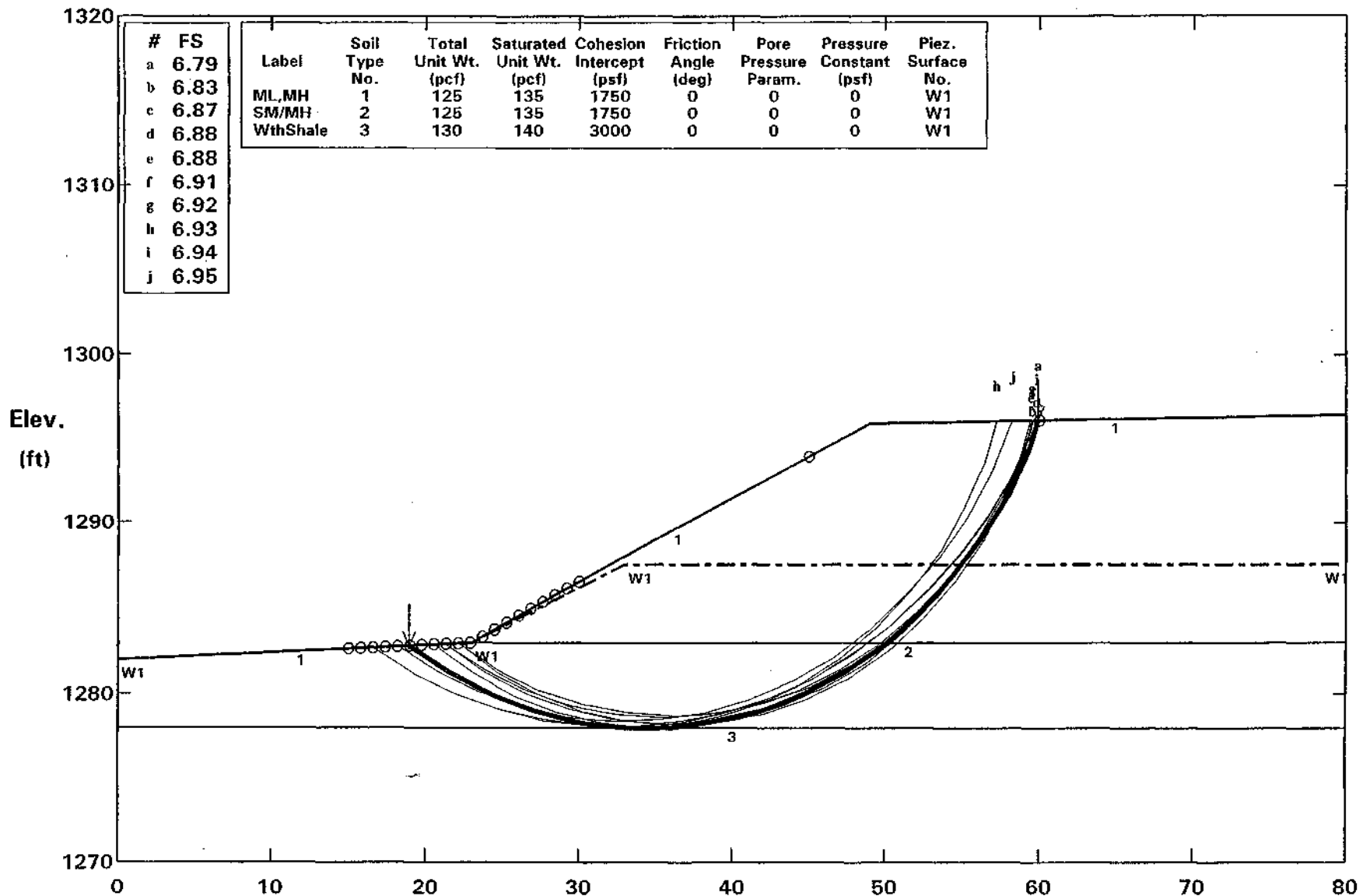
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Factors Of Safety Calculated By The Modified Bishop Method

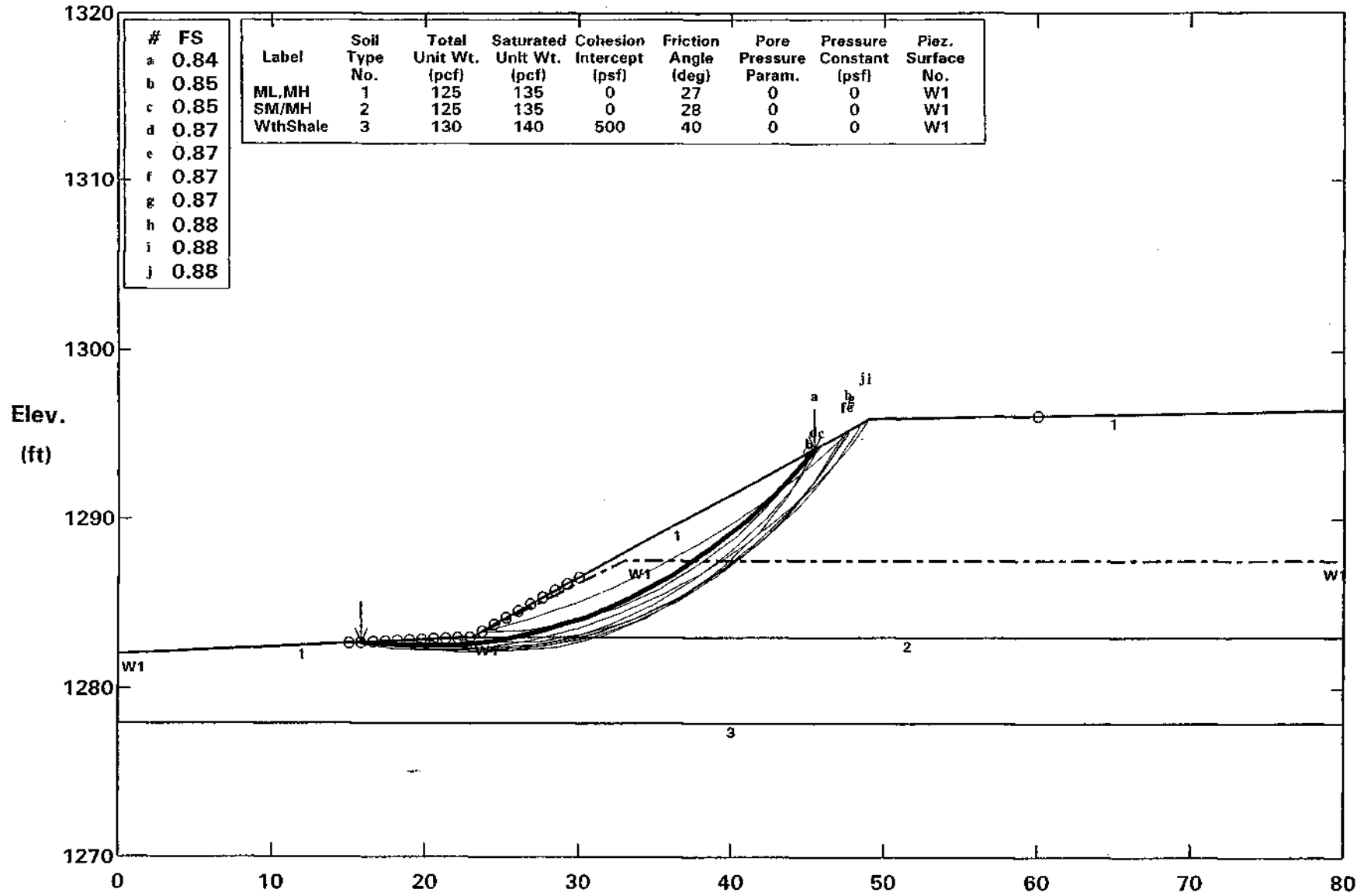
Middle River Regional Jail, Total Stress Station 61 + 30

Ten Most Critical. C:CUT2A.PLT By: RSH 01-29-03 4:16pm



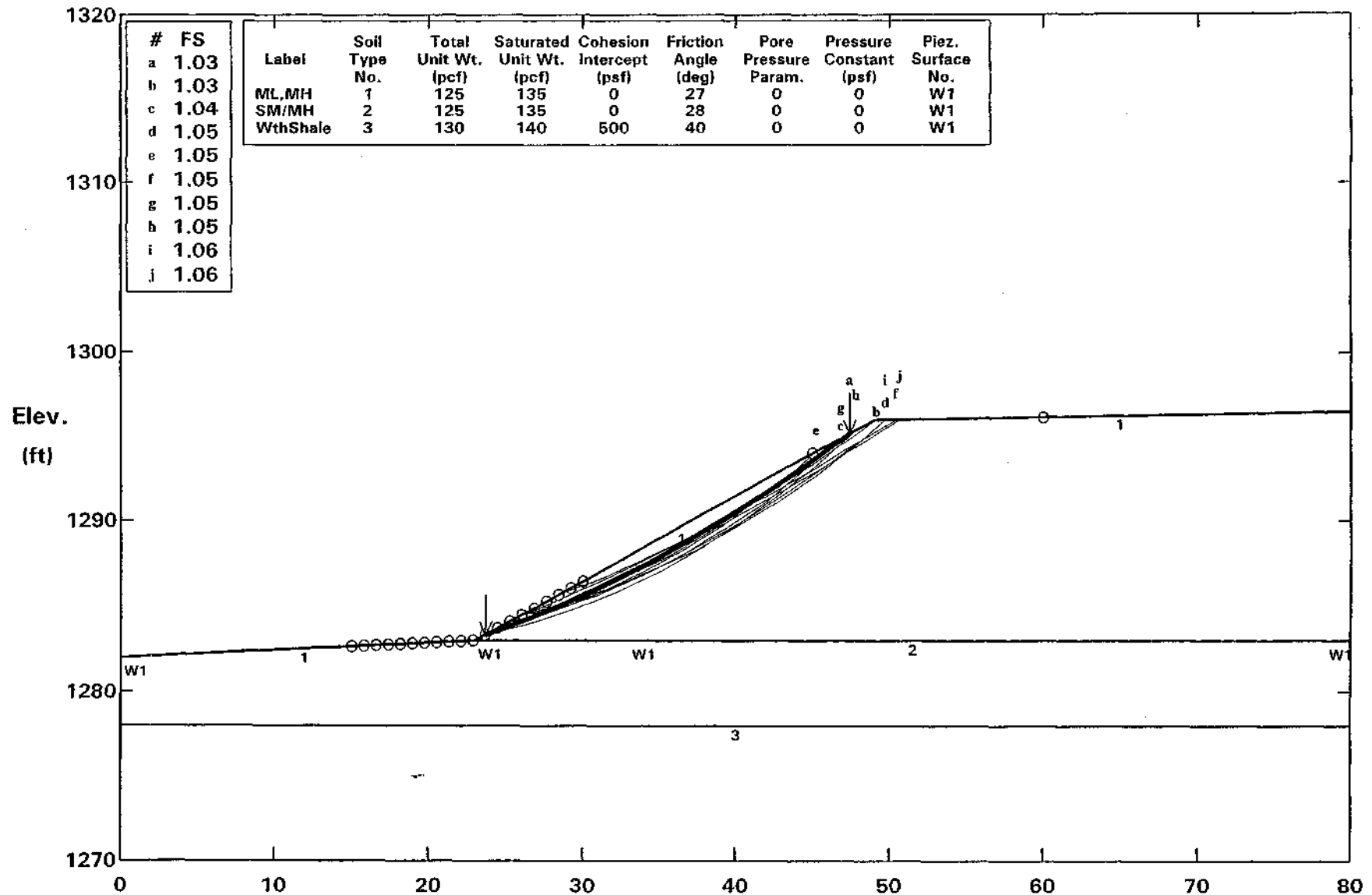
STABL6H FSmin = 6.79 X-Axis (ft)
Factors Of Safety Calculated By The Modified Bishop Method

Middle River Regional Jail, Eff Stress Station 61 + 30
Ten Most Critical. C:CUT2B.PLT By: RSH 01-29-03 4:16pm



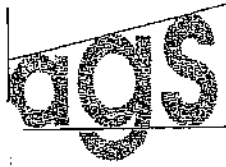
STABL6H FSmin = 0.84 X-Axis (ft)
Factors Of Safety Calculated By The Modified Bishop Method

Middle River Regional Jail, Eff Stress Station 61 + 30
Ten Most Critical. C:CUT2C.PLT By: RSH 01-29-03 4:18pm



STABL6H FSmin = 1.03 X-Axis (ft)
Factors Of Safety Calculated By The Modified Bishop Method

SECTION II



ATLANTIC GEOTECHNICAL SERVICES, INC.
Geotechnical + Materials Testing + Environmental

January 8, 2001
AGS Report No. RG00-848

Mr. Cary Gill, AIA
Moseley Harris & McClintock
601 Southlake Boulevard
Richmond, Virginia 23236

Reference: Preliminary Geotechnical Site Evaluation
New Regional Jail, Juvenile Detention Center
and Courts Building
Augusta County Government Center
Verona (Augusta County), Virginia

Dear Mr. Gill:

Presented herein are the results of Atlantic Geotechnical Services, Inc. (AGS) preliminary geotechnical evaluation of the above referenced site located off Route 11 in Augusta County, Virginia.

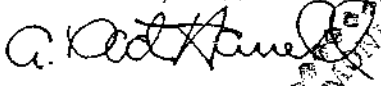
Summarizing, our preliminary findings indicate the subject site is suitable for the correctional facilities development proposed. Future light to moderately-loaded structures may be supported on conventional footing foundations bearing at shallow depths within the native soils or compacted fill consisting of imported, select borrow materials. Slightly deeper footing embedment will be required for footings bearing in the native, moderately-active clays and silts underlying this site. Some deep excavation is anticipated to remove the uncontrolled fill soils existing within the proposed footprint of the Courts Building. Final grades for the improvements proposed should be selected to minimize or eliminate excavation activities within the rock formations encountered at or below El. 1283.5 feet. Light and heavy-duty pavement sections are expected to be typical of similar facilities situated in the Appalachian Valley and Ridge geologic province.

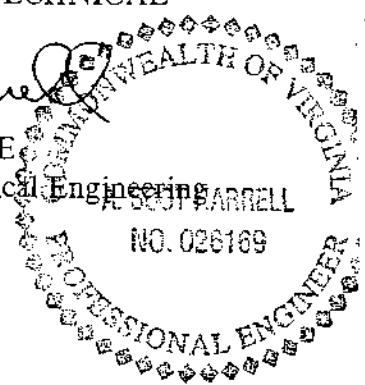
Atlantic Geotechnical Services appreciates the opportunity to be of service to you on this project. We hope this provides you with the information needed for decisions concerning site selection and preliminary site planning and cost estimating.

Please call if you have questions concerning the findings or conclusions presented in this report. We can quickly remobilize to the site and perform supplemental field exploration and laboratory testing to further enhance the findings of our preliminary study, or perform a more thorough investigation of subsurface conditions to provide geotechnical recommendations for final foundation design and construction.

Sincerely,

ATLANTIC GEOTECHNICAL
SERVICES, INC.


A. Scot Harrell, P.E.
Manager/Geotechnical Engineering



COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER
A. SCOT HARRELL
NO. 026169

ASH/eab

Copies submitted: Above (3 bound, 1 unbound)
Hanover Engineers (1)
Attn: Steve Jones, P.E.
Timmons (1)
Attn: Lance Koth, P.E.

REPORT

PROJECT

Preliminary Geotechnical Site Evaluation
New Regional Jail, Juvenile Detention Center
and Courts Building
Augusta County Government Center
Verona (Augusta County), Virginia

CLIENT

Moseley Harris & McClintock
601 Southlake Boulevard
Richmond, Virginia 23236

SUBMITTED BY

Atlantic Geotechnical Services, Inc.
10971 Richardson Road
Ashland, Virginia 23005

DATE

January 8, 2001

PRELIMINARY GEOTECHNICAL SITE EVALUATION

**New Regional Jail, Juvenile Detention Center and Courts Building
Augusta County Government Center
Verona (Augusta County), Virginia**

TABLE OF CONTENTS

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Laboratory Soil Testing Program.....	4
Subsurface Conditions	4
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APPENDIX

Figure 1:	Site Location Map
Figure 2:	Plan of Borings
Figures 3 - 15:	Logs of Borings

EXECUTIVE SUMMARY

Subsurface conditions at an approximate 27-acre tract of land off Route 11 in Augusta County were preliminarily explored by drilling thirteen sample borings within the building footprints to depths varying from 5 feet (auger refusal) to 20 feet below existing grades. Laboratory tests were performed on a limited number of specimens collected from the borings to preliminarily evaluate the engineering properties of the various soil/rock strata encountered in our borings.

The shallow stratigraphy underlying this site consists of a surficial topsoil/siltation layer overlying strata of plastic to highly plastic, slightly jointed, sandy/silty clays and clayey/shaley silts, which in turn are underlain by weathered, jointed shales, siltstones and limestone of soft to very soft induration. An exception is the deep fills underlying the Courts Building, which will require complete removal due to their apparent uncontrolled nature. In general, the native clays and silts are reasonably strong and possess a moderate potential for volumetric changes (i.e., shrink-swell related movements) when subjected to seasonal moisture fluctuations. Where encountered, the weathered rock formations typically lie below a depth of 7 feet on the higher site elevations (below El. 1283.5 ft), and at depths of 4 to 5 feet below existing grades on the lower site elevations (below El. 1275 ft). The more indurated rock was encountered below El. 1277 ft in the test borings.

Our preliminary findings indicate this tract is suitable for development of the correctional facilities proposed. The light to moderately-loaded structures may be supported on conventional footing foundations bearing at shallow depths within the strong, native, undisturbed soils and/or imported, compacted, select structural fill materials placed within the designated building areas. Slightly deeper footing embedment will be required for footings bearing in the potentially-active clays and silts to reduce the chances of future foundation movements. The structural fill materials are expected to govern foundation design and future performance, with bearing capacities ranging from 2,500 to 3,500 psf likely available for shallow footing design in compacted structural fills consisting of imported borrow materials. Overexcavation activities are anticipated in cut grading areas of the building footprints to allow placement of a non-active pad of structural fill to reduce the possibility of active soil-related movements in the soil-supported floor slabs. Minor delays in construction schedules or preloading of building pads spanning natural drainage features may be required to reduce the impact of ground movements on foundation performance resulting from consolidation of weak native soils supporting thick structural fills.

Ground water is not expected to significantly impact shallow footing and utility construction. Conventional earthwork equipment should suffice in completing site grading and foundation/utility excavation activities anticipated for the improvements proposed. Rock-excavating equipment and/or blasting techniques may be required to complete excavations penetrating below El. 1283.5 ft, and should definitely be anticipated for excavations penetrating the more indurated rock encountered at or below

El. 1277 ft. Weak surficial soils may require removal or improvement where buildings, roadways or underground utilities traverse low-lying areas of the site.

Light and heavy-duty pavement sections are expected to be typical of similar facilities situated in the Appalachian Valley and Ridge geologic setting.

The enclosed report discusses the findings and conclusions of our preliminary studies in greater detail for land use planning and cost estimating.

PURPOSES AND SCOPE OF WORK

The objectives of our study were to preliminarily assess subsurface conditions across the subject tract and to utilize the information gathered to develop geotechnical recommendations for preliminary land use planning and construction cost estimating.

Our work was performed in the following phases:

- Field Exploration Program
- Laboratory Soil Testing
- Engineering Evaluation/Analyses

The findings of our study, as well as our preliminary recommendations for site master planning and construction cost estimating, are included in subsequent sections of this report. Once project master planning is completed, final geotechnical engineering studies will be required to further assess subsurface conditions and provide final recommendations for foundation/pavement design and construction.

SITE LOCATION

The site under consideration consists of an approximately 27-acre tract of land situated southeast of the Augusta County Government Center located off Route 11. The location of the site is shown on the Site Location Map (Figure 1) in the Appendix of this report.

LAND USE

Improvements proposed include a new, 270,000 sq ft, single-story Jail, an 82,500 sq ft, three-story Courts Building, and a 31,120 sq ft, single-story Juvenile Detention Center. A new 425-space parking lot will service the Jail and Juvenile Detention Center, while a new 375-space parking lot will service the Courts Building. Light to moderate structural loads are anticipated for the various buildings, with column and wall loads likely not exceeding 300 kips and 8 kips per linear foot, respectively.

Preliminary finished floor elevation for the Jail is 1280 feet, while a finished floor elevation of 1290 feet has been preliminarily established for the Juvenile Detention Center; a preliminary finished floor elevation has not been established for the Courts Building. Based on the rolling to hilly topography and above preliminary floor elevations, significant cut and fill grading (plus or minus 11 feet in depth) is anticipated to achieve finished grades in areas of proposed improvements.

EXISTING SITE CONDITIONS

The site consists of a predominantly open, grass-covered tract of land with a rolling topography. Sparse saplings and brush exist along the wire fencelines encompassing a portion of the property for the purposes of livestock grazing. A small shed is also located on the property.

With respect to topography, the ground surface drops approximately 25 feet within the designated building areas; an abrupt change in elevation occurs at the edge of Government Center pavements (near Boring B-1), where the ground has been elevated to accommodate the existing facilities. Topographic lows on this site act as natural drainage features for the region. One drainage feature crosses a corner of the Jail footprint, while another drainage feature runs south of the Jail and Juvenile Detention Center; both drainage features will feed into a stormwater management basin to be located southeast of the improvements proposed.

Based on the variable topography, existing site drainage is visually assessed to vary from poor to good, with poor drainage conditions generally existing where slopes flatten adjacent to drainage features. With the exception of topographic lows associated with the natural drainage features, the ground surface was reasonably firm at the time of our field exploration and presented little problems to drill rig access about the site.

FIELD EXPLORATION PROGRAM

Subsurface conditions were explored by drilling thirteen sample borings at the approximate locations shown on the Plan of Borings (Figure 2) in the Appendix of this report. The conceptual boring locations were selected by the Project Structural Engineer (Hanover Engineers) and fall within the proposed building footprints. The actual boring locations were staked in the field by AGS personnel using topographic information provided by the Client and by tape and right angle measurements from existing building corners, roads and property boundaries; consequently, the borehole locations shown on Figure 2 should be considered approximate. To extend the usefulness of the preliminary borings in the final geotechnical engineering study, we recommend vertical and horizontal control be established for these borings as soon as possible (before the start of site clearing and earthwork activities).

A four-wheel drive, truck-mounted drill rig and hollow-stem auger techniques were used to extend the borings to depths varying from 5 feet to 20 feet below existing grades. Auger refusal was encountered prior to achieving the proposed drilling termination depth in several of the borings (Borings B-5, B-6, B-8 and B-11). Drilling and sampling activities were performed by Ayers & Ayers, Inc. of Powhatan, Virginia.

Soil samples were obtained in the borings using Standard Penetration Test (SPT) procedures (ASTM D 1587) at approximate 2-ft intervals to a depth of 10 feet, and on 5-ft intervals thereafter. All soil samples obtained were sealed in protective containers and returned to our laboratory for further classification and testing. Logs of stratigraphic conditions encountered in the individual borings are presented on Figures 3 through 15 in the Appendix.

Water levels in the open boreholes were measured at the completion of drilling, at which time the boreholes were backfilled with the auger cuttings for safety purposes. Water levels recorded in the boreholes are presented on their respective boring log.

LABORATORY SOIL TESTING PROGRAM

All soil samples were visually classified by a staff Geotechnical Engineer. Soil tests performed in our laboratory on recovered soil samples consist of classification tests, i.e., moisture content, sieve analyses (percent passing No. 200 sieve) and Atterberg limits (plasticity). All soil samples will be retained in our laboratory for thirty days following completion of this report, at which time they will be discarded unless further testing is requested by the Client.

SUBSURFACE CONDITIONS

A brief description of regional geology is presented in the following report section, along with specific information concerning stratigraphic and groundwater conditions beneath the tract. The boring logs provided in the Appendix of this report should be consulted for specific information concerning soil and groundwater conditions beneath the tract.

Geologic Setting

A review of geologic literature reveals the subject tract is situated in the Appalachian Valley and Ridge Province. The site appears to be underlain chiefly by Upper Ordovician (Paleozoic era) limestones, shales and sandstones of the Martinsburg Formation.

Stratigraphy

In general, the natural stratigraphy penetrated within the shallow reaches of the test borings consists of a thin veneer (average 3 to 6-inch thick) of brown, sandy silt topsoils overlying strata of plastic to highly plastic, sandy/silty clays and clayey/shaley silts, which in turn are underlain by shales, siltstones and limestone. An exception to the above was encountered in Boring B-11, where approximately 2.5 feet of dark brown

to dark gray, organic, sandy silts and clayey silts were encountered; these deeper silt deposits are believed to be associated with depositional processes (i.e., siltation) within the seasonal floodplain of the nearby natural drainage feature.

The upper sandy/silty clays are generally multi-hued in color (brown, gray, yellow and red), and extend to depths varying from about 2 feet to 9.5 feet below existing grades in a majority of the test borings. The clays penetrated within 2 to 3 feet of existing grades in several of the test borings may have originated from site grading activities associated with the existing Government Center facilities. These clays are indicated to be plastic to highly plastic, with one specimen tested exhibiting a liquid limit of 67 and a plasticity index of 41. Sand contents of 26 and 49 percent were measured in two of the clay specimens. Natural moisture contents measured in the clays at the time of our field exploration generally ranged between 20 and 30 percent; based on the plastic limit measured for the single clay specimen tested, the clays were in a relatively "dry" state at the time of our field exploration. Designated as CL and CH soils under the Unified Soil Classification System (USCS), clays of this plasticity are generally recognized to possess low to moderate shrink-swell potential based on their sand contents and current soil moisture and overburden conditions. Standard penetration resistance values recorded in these sandy/silty clays generally vary between 10 and 20 blows per foot of sampler penetration, indicating stiff to very stiff clay consistencies.

The underlying clayey/shaley silts are predominately multi-hued brown, gray, green and yellow in color (with some deeper dark gray to black partings), are slightly jointed, and extend to depths varying from 6.5 feet below existing grades to at least the 15 to 20-ft termination depths of several of the deeper borings. Intermittent shale partings and seams are common within this stratum. These silts are indicated to be plastic to highly plastic, with measured liquid limits varying between 45 and 79 and plasticity indices ranging between 16 and 48. One silt specimen tested exhibited a sand

content of 35 percent. Natural moisture contents measured in the silts at the time of our field exploration generally ranged between 30 and 40 percent, with some moisture contents in excess of 50 percent. Designated as ML and MH soils under the USCS, silts of this plasticity are generally recognized to possess low shrink-swell potential based on their mineralogy, sand contents and current soil moisture and overburden conditions. Standard penetration resistance values recorded in these clayey/shaley silts generally vary between 4 and 20 blows per foot of sampler penetration, indicating variable consistencies ranging between firm and very stiff. The weaker silts were encountered in borings drilled immediately adjacent to the natural drainage features traversing this site (Borings B-8, B-11, B-12 and B-13).

The underlying shales, siltstones and limestone vary from pale brown to gray to black in color, exhibit an intermittent weathered appearance, and extend to the termination depths of Borings B-5 through B-11, inclusive. Auger refusal was encountered in the weathered shales, siltstones and limestone at depths varying between 5 and 13.8 feet below existing grades in Borings B-5, B-6, B-8 and B-11. The shales typically exhibit a jointed or blocky secondary structure. Standard penetration resistance values recorded in the shales, siltstones and limestone vary from 58 blows to in excess of 100 blows for inches of sampler penetration, suggesting very soft to soft rock indurations.

An exception to the above was encountered in Boring B-1, where fill deposits associated with site grading activities for the existing Government Center parking lot were encountered to a depth of about 14 feet below top of pavement. These fills appear to be underlain by the original topsoil layer covering this site. The fill consists predominantly of plastic to highly plastic, jointed, silty clays and sandy, silty clays indigenous to this region mixed with variable percentages of hard shale fragments, coal and brick pieces, and some roots and topsoils. A slight petroleum odor was noted in the sample collected at a depth of 7 feet below existing grade in Boring B-1. Natural

moisture contents measured in the fill clays at the time of our field exploration were highly variable, ranging between 20 and 35 percent. Standard penetration resistance values recorded in the fill were consistent (8 to 9 blows per foot), indicating stiff clay consistencies. These resistance values suggest the soils were placed with some compactive effort (likely limited to hauling/spreading equipment traffic), but not under compaction-controlled conditions.

Ground Water

Upon completion of drilling, measurements conducted within the hollow stem augers revealed water in Borings B-4, B-8, B-12 and B-13 at depths varying from about 4 to 17.5 feet below the ground surface. The remaining boreholes were found to be "dry" prior to removal of the augers from the ground. "Dry" conditions were encountered in all boreholes upon extraction of the augers, although sidewall caving had occurred in all boreholes resulting in new bottoms varying from 2.5 to 8.5 feet below existing ground.

A clearer understanding of groundwater conditions beneath this site would require the installation and long-term monitoring of piezometers. However, our observations suggest that the groundwater table exists at or below El. 1275 ft at this site. Groundwater seepage may be encountered at shallower depths on a transient basis, particularly following periods of heavy or prolonged precipitation. If possible, consideration should be given to scheduling earthwork and foundation construction activities for site development during the drier seasonal periods (i.e., the summer and early fall seasons).

SITE PLANNING AND FOUNDATION DESIGN CONSIDERATIONS

Based on the findings of our preliminary study, the subject site is considered suitable for development of the correctional facilities proposed. Future buildings may be supported on shallow footing foundations bearing in the strong, native soils or compacted structural fills consisting of imported materials. Factors supporting the suitability of this tract for future development are presented below, along with preliminary recommendations for foundation design and construction.

This tract is characterized by a predominantly open, grass-covered, rolling terrain, natural drainage features, and a subsurface stratigraphy consisting of plastic to highly plastic, sandy/silty clays and clayey/shaley silts overlying weathered shales, siltstones and limestone.

With the exception of topsoils and weak, wet siltation deposits situated in or immediately adjacent to natural drainage features, the natural soils underlying this site possess sufficient strength in their present state to support the proposed lightly to moderately-loaded buildings on shallow foundation systems consisting of conventional spread and continuous footings and at-grade floor slabs. Based on the findings of Boring B-1, the deep fill materials existing within the Courts Building will require removal and replacement with imported, compacted, select structural fills to finished grade. Some in-place scarification/recompaction may be required of the possible fill deposits encountered in the near-surface profiles of several of the other borings to improve the load-carrying characteristics of these soils, provided the soils are free of organics and debris.

With respect to structural fill materials, a majority of the soils penetrated within anticipated excavation depths in the test borings consist of plastic to highly plastic, potentially-active clays and jointed silts and, therefore, are considered unsuitable to satisfy site grading requirements. The difficulties typically experienced in placing and achieving desired densities in structural fill consisting of highly plastic clays and silts also renders these soils undesirable structural fill materials. On-site excavated soils suitable for consideration as structural fill materials appear to be limited to thin, surficial deposits of sandy, silty clays (classified as CL soils on the boring logs) located intermittently across

this site. It appears that a majority, if not all, of the structural fill grading requirements for this project will be achieved by importing select fill materials. This requirement should be taken into account when establishing final grades for the buildings and pavements, since surplus soils generated during site grading activities will require placement in non-structural areas (pavement and landscape areas) or hauling off site.

As mentioned previously, the highly plastic, silty clays and clayey silts underlying this parcel are generally recognized to possess moderate shrink/swell potential under fluctuating moisture conditions. With respect to shallow foundations, slightly deeper footing embedment will be required for footings bearing in these potentially-active soils to found the footings below the "active zone" (defined as the depth below grade influenced by seasonal moisture fluctuations). Furthermore, establishing and maintaining good site drainage will be critical to the future performance of soil-supported floor slabs and flatwork (pavements, sidewalks, patios, etc.) resting on these soils.

As mentioned previously, significant cut and fill grading is anticipated to achieve finished grades within the building footprints based on the preliminary finished floor elevations and rolling topography existing at this site. Consequently, shallow footings supporting the buildings are expected to be founded in both natural, undisturbed soils and compacted structural fill materials, with the fill materials likely governing foundation design and performance. Design bearing pressures are expected to depend on the composition of the materials selected for use as structural fill, their thickness, and the density to which they are compacted. A minimum footing depth of 24 inches is recommended for shallow spread and continuous footings bearing in imported, compacted, select structural fill materials. Slightly deeper footing embedment (36 to 42 inches) will be required for footings bearing in the native, highly plastic, silty clays and clayey silts remaining at finished grades within the building footprints. Allowable soil bearing pressures in the order of 2,500 to 3,500 psf will likely be available for footing design in the native, undisturbed soils and/or imported, compacted, select structural fill materials. For reasonable structural fill thicknesses (less than 10 feet), compaction of the imported, select structural fill materials to at least **95 percent** of standard Proctor density should be adequate to achieve the above soil bearing capacities, yet limit differential settlements in shallow footings spanning both natural and compacted fill soils to tolerable values. An increased compactive effort (minimum

98 percent of standard Proctor density) will likely be recommended for structural fill thicknesses exceeding 10 feet to reduce future settlements in shallow footings bearing in the deeper structural fills to tolerable limits. Foundation settlements of 1 inch or less are anticipated for the range of allowable bearing pressures mentioned above, provided the structural fill soils satisfy the compaction requirements recommended above.

Increased building settlements are possible where relatively thick structural fills are placed within building footprints spanning or encroaching into the natural drainage features traversing this site. The lower strength silts encountered in several of the borings drilled adjacent to these features (such as in Borings B-8, B-11, B-12 and B-13) could consolidate under the surcharge loads imposed by thick deposits of compacted, select structural fill. Such conditions may require a time delay between completion of building pad construction and the start of foundation construction to allow the weak, native foundation soils to consolidate under the weight of the compacted structural fills. If construction schedules warrant, it may be possible to accelerate consolidation processes within the native foundation soils by providing additional surcharge load on the building pad area and monitoring ground movements until substantial soil consolidation is achieved, at which time the surplus fill soils are removed to finished grade.

Some overexcavation should be anticipated in cut areas of the building footprints to remove a portion of the native, potentially-active, silty clays (CH soils) and clayey silts (MH soils) and allow founding the soil-supported concrete floor slabs on a uniform pad of imported, compacted, select structural fill. The final 4 inches of structural fill should consist of clean, coarse sands or open-graded stone (such as VDOT 57 aggregate) to provide a capillary break directly beneath the floor slabs.

Some undercutting (on the order of 24 to 36 inches in depth) should also be anticipated following site clearing to remove weak, wet soils existing in or adjacent to natural drainage features traversing building and pavement areas. As an alternative, it may be possible to utilize combinations of manufactured geosynthetics and coarse stone (such as VDOT No. 3 aggregate) to effectively bridge weak, wet, non-organic soils located in drainage features encroaching into building footprints. In extreme conditions, it may be necessary to wrap the coarse bridging stone in a geotextile to create a permanent drainage media, and to

hydraulically connect the drainage media to a stormwater system. The need for such site improvement techniques will depend somewhat on site grading requirements in the lower elevation drainage areas and climatic conditions existing at the time of construction.

Static groundwater conditions appear to be situated at or below El. 1275 ft at this site. Consequently, ground water is not expected to detrimentally impact shallow foundation construction for the buildings proposed. Although groundwater seepage may be encountered in shallow footing or utility excavations at the time of construction, the seepage is expected to be minor in quantity and controllable using conventional sump and pump dewatering methods. More elaborate dewatering techniques may be required to control seepage in deep excavations for underground utilities, particularly utilities traversing natural drainage features on the lower elevations of the site, depending on final grading plans, the depth of the trenches, and climatic conditions existing at the time of construction.

Based on the findings of the test borings, weathered rock (shales, siltstones and limestone) appears to be situated below El. 1283.5 ft at this site, with the more indurated rock encountered at or below El. 1277 ft. Based on the preliminary finished floor elevations selected for the buildings, conventional earth-moving equipment (pans, loaders, graders, backhoes, dump trucks, etc.) is expected to be adequate in performing site grading activities for the cuts anticipated for the buildings proposed. Rock saws and backhoes/trackerhoes equipped with rock-ripping teeth may be required to expeditiously complete mass grading and foundation/utility excavations for the Jail, since the preliminary finished floor elevation of 1280 ft is expected to result in penetration of the shale formation. Similar equipment used in conjunction with rock blasting techniques will likely be required to expeditiously complete foundation and utility trench excavations extending into the harder rock formations encountered at or below El. 1277 ft. If possible, finished grades for the new buildings and associated flatwork should be selected to minimize or eliminate excavation into the rock formations underlying this site.

Due to the rolling topography, deep fills are anticipated beneath portions of the buildings to achieve finished grades. Where existing grades exceed 4:1 (horizontal:vertical) slopes, we recommend that benches be cut into the hillside slopes to facilitate fill placement and compaction

activities, as well as provide long-term stability of earthen embankments supporting the buildings and pavements. Temporary construction slopes should be cut no steeper than 1:1, while permanent slopes should be established at slopes of 4:1 (horizontal:vertical) or flatter. Earth retaining systems (such as reinforced earth structures, cribwalls, gabions, cantilever concrete walls, etc.) will be required to establish steeper permanent slopes. With respect to trench excavations in the native, undisturbed soils, excavations exceeding 4 feet in depth should be cut at 1:1 slopes or flatter.

Regarding pavements, typical sections in the Appalachian Valley and Ridge geologic setting consist of 2-inch asphalt surface course overlying 6 to 8 inches of crushed stone base course in light-duty traffic areas (automobile parking areas), and 4.5 to 5 inches of asphaltic surface and base course materials overlying 6 to 8 inches of crushed stone in heavy-duty traffic areas (entrance drive, service drives, etc.).

CONCLUSIONS

Based on the findings of our preliminary geotechnical site evaluation, it is our opinion the subject tract is suitable for development of the correctional facilities proposed.

With respect to geotechnical considerations, the natural soils underlying this site possess adequate strength to support the buildings on shallow conventional footing foundations. Some undercutting or scarification/recompaction is anticipated to improve the load-carrying characteristics of the weak, wet soils expected to exist in or immediately adjacent to the natural drainage features traversing this site. The deep fills encountered in the boring drilled in the footprint of the Courts Building will require removal due to the uncontrolled nature of these fills.

Shallow footing design is expected to be governed by the strength of compacted structural fill materials placed to achieve finished grades in the building areas. Allowable bearing pressures ranging from 2.5 to 3.5 ksf will likely be available for shallow footing design, provided the structural fill materials consist of imported,

compacted, select fills. Design bearing pressures and associated settlements recommended for final footing design are expected to depend on the compactive effort applied to the structural fill materials, with greater compactive effort required for structural fills exceeding 10 feet in depth. Some overexcavation is anticipated in cut building areas to remove a portion of the highly plastic, potentially-active clays and silts located at proposed finished grade beneath the floor slabs; such overexcavation will allow placement of a compacted pad of select structural fill directly beneath the floor slabs, thereby reducing the chances of active soil-related differential movements in the soil-supported slabs.

Construction schedules may be impacted by the need to delay foundation construction activities following completion of building pad construction to allow ground movements to subside in building areas where thick structural fills overlie weaker native soils located in or adjacent to natural drainage features. Consideration may be given to preloading the building pad areas to accelerate ground movements and expedite construction schedules.

Rock-excavating equipment and/or blasting techniques may be required to complete excavations penetrating the more indurated rock encountered at or below El. 1277 ft. Consideration should be given to selecting finished grades that minimize mass grading and foundation/utility excavations below El. 1283.5 ft, and that eliminate excavation activities below El. 1277 ft.

Ground water is not expected to present significant problems to shallow foundation and utility construction. Subgrade undercutting is expected to be limited to any isolated weak, surficial fill deposits as well as the lower elevations of the site (i.e., natural drainage features); undercut quantities in these areas may approach 24 to 36 inches in depth. Undercutting quantities may be reduced by compaction improvement of any weak, surficial fill deposits and utilizing a combination of geosynthetics and coarse stone to effectively bridge weak, wet soils located in natural

drainage features. Conducting earthwork activities during the drier summer months is expected to minimize subgrade undercut requirements for future development.

A majority of the on-site excavated soils are deemed unsuitable for reuse as structural fill materials on this site due to their plasticity and shrink-swell potential. Consideration may be given to utilizing the on-site excavated clays and silts as fill materials beneath pavements if some pavement movements are deemed acceptable, although some difficulty may be experienced in achieving proper compaction in fill materials consisting of the on-site excavated clays and silts due to the jointed, moisture-sensitive nature of these soils.

Provided finished grades are established to limit excavation into the hard rock formations underlying this site, construction costs to develop this tract are expected to be average to slightly above average for similar facilities in this region of Virginia.

LIMITATIONS

The recommendations and design parameters presented in this report are preliminary in nature, based on the data obtained from thirteen borings drilled within the building footprints and observations made during site walk-overs. Supplemental field exploration and laboratory analyses will be required prior to site development to further assess geotechnical conditions in the building and pavement areas and provide final recommendations for design and construction of foundations and pavements for the correctional facilities and courts building.

The scope of our geotechnical engineering study does not include an environmental assessment of the air, soil or water conditions either on or adjacent to this site. No environmental opinions were prepared for or presented in this report.

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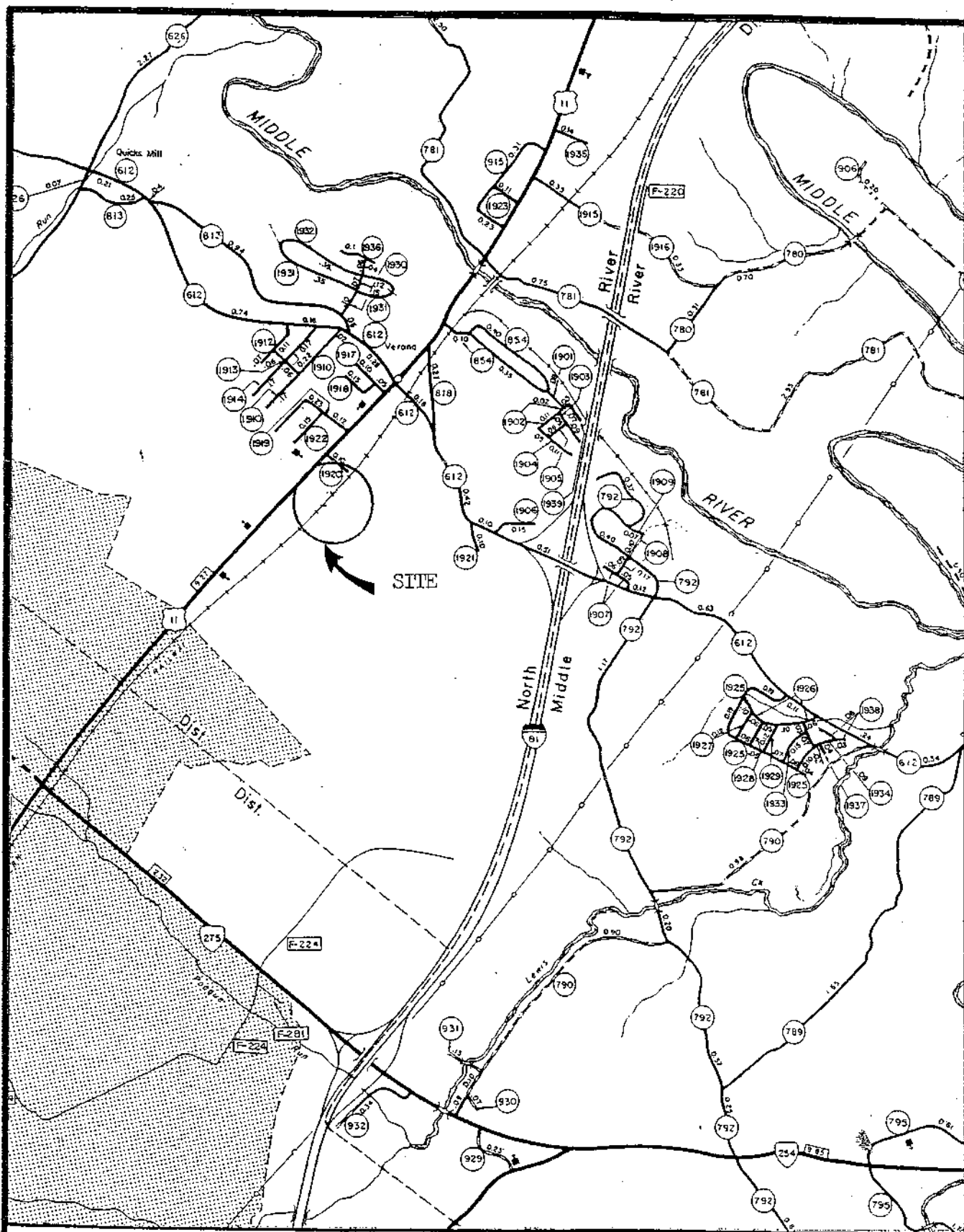
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APPENDIX

Figure 1: Site Location Map

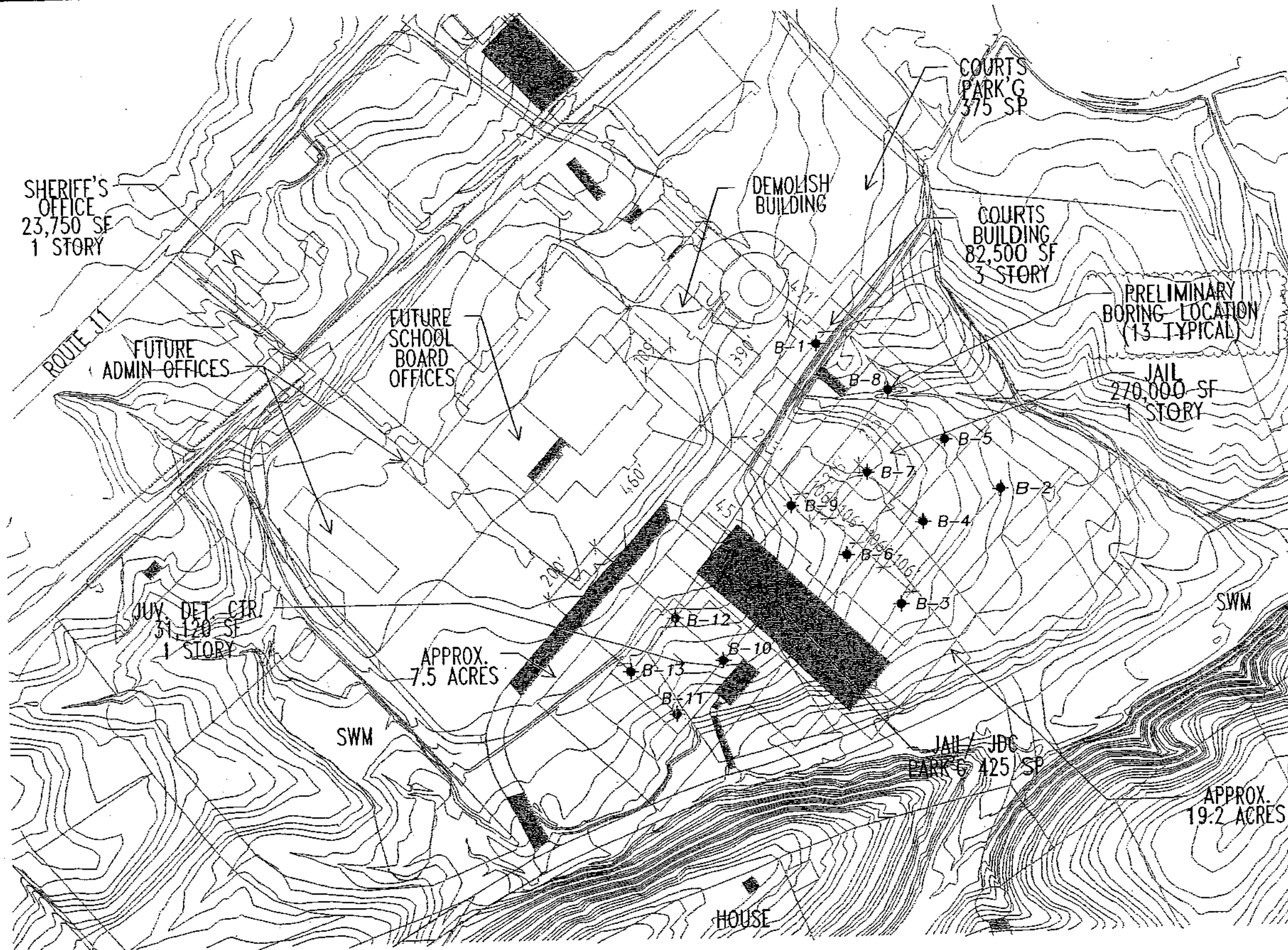
Figure 2: Plan of Borings

Figures 3 - 15: Logs of Borings



SITE LOCATION MAP
 NEW REGIONAL JAIL, JUVENILE DETENTION CENTER
 AND COURTS BUILDING
 AUGUSTA COUNTY, VIRGINIA

FIGURE 1



LEGEND


◆ B-1 SOIL BORING LOCATION AND DESIGNATION

PLAN OF BORINGS

SCALE: 1" = 300'-0"

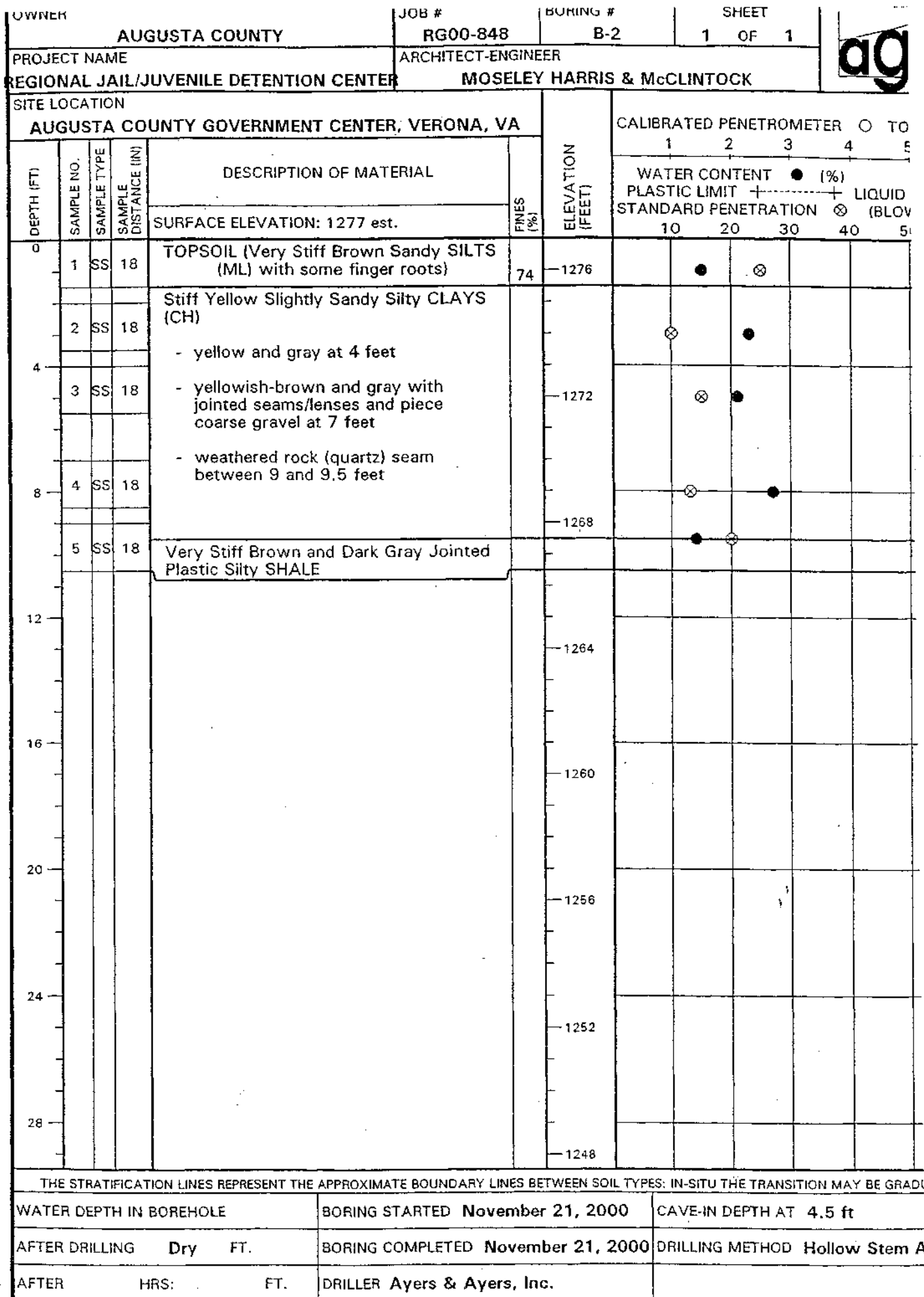
**REGIONAL JAIL
AND
JUVENILE DETENTION CENTER**
AUGUSTA COUNTY, VIRGINIA

FIGURE 2

OWNER AUGUSTA COUNTY				JOB # RG00-848		BORING # B-1		SHEET 1 OF 1			
PROJECT NAME REGIONAL JAIL/JUVENILE DETENTION CENTER				ARCHITECT-ENGINEER MOSELEY HARRIS & McCLINTOCK							
SITE LOCATION AUGUSTA COUNTY GOVERNMENT CENTER, VERONA, VA											
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	DESCRIPTION OF MATERIAL	FINES (%)	ELEVATION (FEET)	CALIBRATED PENETROMETER O TONS/FT ²				
							1	2	3	4	5
				SURFACE ELEVATION: 1299 est.			WATER CONTENT ● (%)				
							PLASTIC LIMIT +-----+ LIQUID LIMIT				
							STANDARD PENETRATION ⊗ (BLOWS/FT.)				
							10	20	30	40	50
0	1	SS	18	ASPHALTIC CONCRETE (6")							
				GRADED STONE BASE			●			⊗	
	2	SS	18	FILL: 2.0-3.5 ft: Stiff Yellow and Gray Jointed Silty CLAYS (CH) 4.0-5.5 ft: Stiff Yellow/Red/Gray Jointed Silty CLAYS (CH) with cemented nodules 7.0-8.5 ft: Stiff Dark Brown/Gray/Reddish-Brown Slightly Sandy Silty CLAYS (CH) with some hard shale fragments and slight petroleum odor 9.0-10.5 ft: Stiff Dark Gray Sandy Silty CLAYS (CL) with some hard shale, coal and brick pieces and trace roots		1296	⊗			●	
4	3	SS	18				⊗			●	
	4	SS	18			1292	⊗	●			
8	5	SS	18			1288	⊗		●		
12											
	6	SS	18	Stiff Gray Sandy SILT (ML) with some finger roots and peat lenses (Natural Topsoil Layer?)		1284	⊗		●		
16				Stiff Yellow and Gray Slightly Jointed Silty CLAY (CH)							
	7	SS	18			1280		⊗		●	
20											
						1276					
24											
						1272					
28											

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES; IN-SITU THE TRANSITION MAY BE GRADUAL

WATER DEPTH IN BOREHOLE		BORING STARTED November 21, 2000		CAVE-IN DEPTH AT 7.5 ft	
AFTER DRILLING	Dry FT.	BORING COMPLETED November 21, 2000		DRILLING METHOD Hollow Stem Auger	
AFTER	HRS: FT.	DRILLER Ayers & Ayers, Inc.			



OWNER

AUGUSTA COUNTY

JOB #

RG00-848

BORING #

B-3

SHEET

1 OF 1

ags

PROJECT NAME

ARCHITECT-ENGINEER

REGIONAL JAIL/JUVENILE DETENTION CENTER

MOSELEY HARRIS & McCLINTOCK


SITE LOCATION

AUGUSTA COUNTY GOVERNMENT CENTER, VERONA, VA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	DESCRIPTION OF MATERIAL	FINES (%)	ELEVATION (FEET)	CALIBRATED PENETROMETER ○ TONS/FT ²				
							1	2	3	4	5
							WATER CONTENT ● (%)				
							PLASTIC LIMIT +-----+ LIQUID LIMIT				
							STANDARD PENETRATION ⊗ (BLOWS/FT.)				
							10	20	30	40	50
0	1	SS	18	TOPSOIL (Stiff Brown Sandy SILT (ML) with some finger roots)				●			
	2	SS	18	Stiff Pale Brown/Red/Gray Slightly Jointed Silty CLAYS (CH)		-1280		⊗	●	+	67
4	3	SS	18	Stiff Pale Brown and Gray Jointed Shaley SILT (ML)		-1276		⊗	●		
				- very stiff at 7 feet							
8	4	SS	18	- very shaley, less plastic below 9 feet					●	⊗	+
	5	SS	18	- hard, dark gray/black at 14.5 feet		-1272		●	⊗		
12											
	6	SS	18			-1268		●			⊗
16											
						-1264					
20											
						-1260					
24											
						-1256					
28											


THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU THE TRANSITION MAY BE GRADUAL

WATER DEPTH IN BOREHOLE		BORING STARTED November 21, 2000		CAVE-IN DEPTH AT 7.2 ft	
AFTER DRILLING	Dry FT.	BORING COMPLETED November 21, 2000		DRILLING METHOD Hollow Stem Auger	
AFTER	HRS: FT.	DRILLER Ayers & Ayers, Inc.			

OWNER AUGUSTA COUNTY				JOB # RG00-848		BORING # B-4		SHEET 1 OF 1			
PROJECT NAME REGIONAL JAIL/JUVENILE DETENTION CENTER				ARCHITECT-ENGINEER MOSELEY HARRIS & McCLINTOCK							
SITE LOCATION AUGUSTA COUNTY GOVERNMENT CENTER, VERONA, VA											
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	DESCRIPTION OF MATERIAL	FINES (%)	ELEVATION (FEET)	CALIBRATED PENETROMETER ○ TO				
							1	2	3	4	5
				SURFACE ELEVATION: 1283 aprx.			WATER CONTENT ● (%)				
							PLASTIC LIMIT +-----+ LIQUID				
							STANDARD PENETRATION ⊗ (BLOV)				
							10	20	30	40	50
0	1	SS	18	TOPSOIL (Brown Sandy SILT (ML) with some finger roots)				⊗ ●			
				Stiff Brown and Yellow Sandy Silty CLAYS (CL)							
	2	SS	18	- some dark brown, weathered pockets		1280		⊗		●	
4				Stiff Yellow Slightly Sandy Silty CLAYS (CH)							
	3	SS	18	- yellow and gray at 4 feet				⊗		●	
						1276					
8	4	SS	18	Very Stiff Brown and Gray Jointed Shaley SILT (MH)					●		
				- with intermittent yellow and gray, jointed, CH silty clay layers/seams							
	5	SS	18	- stiff below 9 feet		1272		⊗		●	
12											
	6	SS	18			1268		⊗		●	
16											
						1264					
20											
						1260					
24											
						1256					
28											

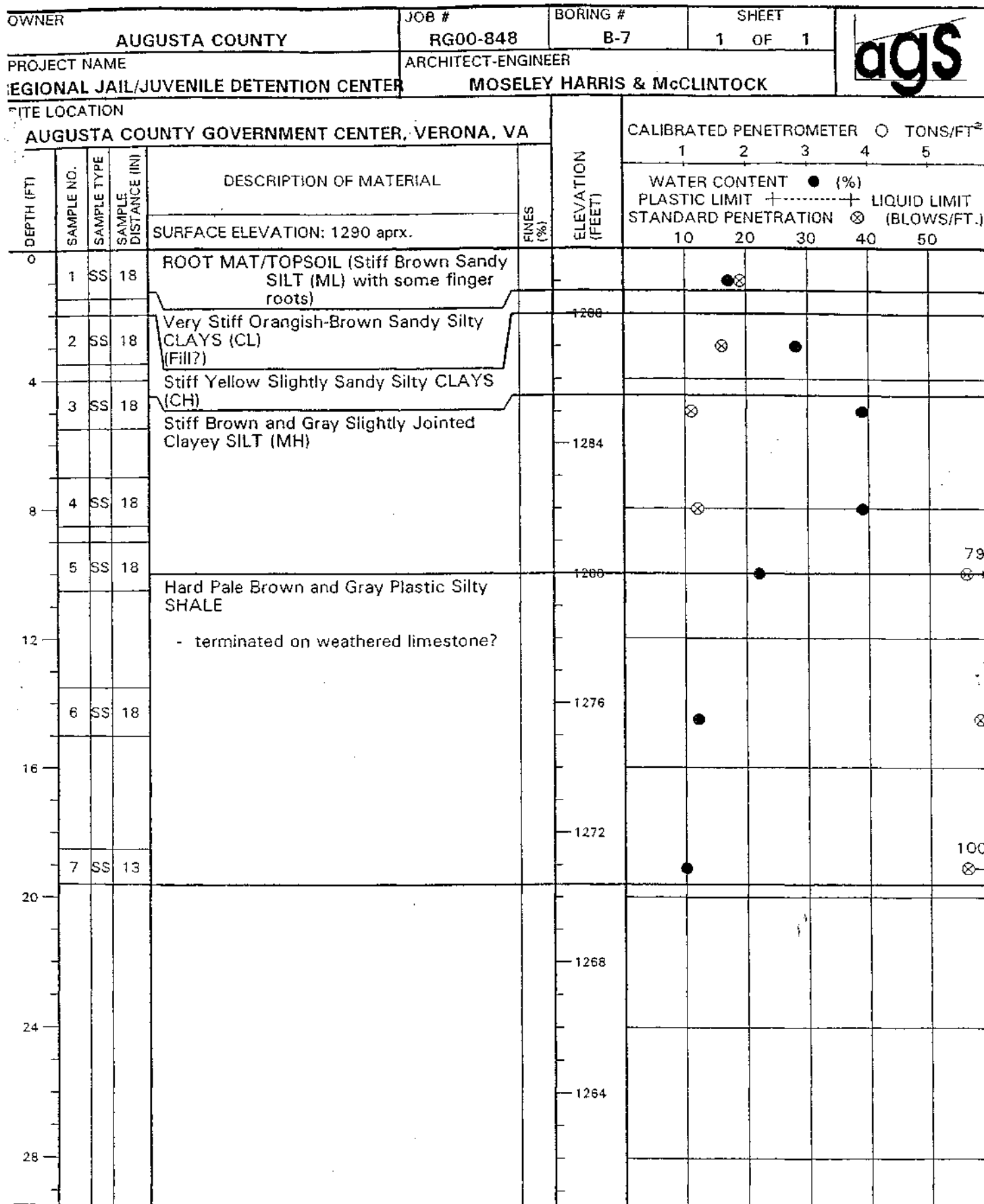
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU THE TRANSITION MAY BE GRADUAL

WATER DEPTH IN BOREHOLE			BORING STARTED November 21, 2000		CAVE-IN DEPTH AT 7.0 ft	
AFTER DRILLING 14.3 FT.			BORING COMPLETED November 21, 2000		DRILLING METHOD Hollow Stem A	
AFTER HRS: FT.			DRILLER Ayers & Ayers, Inc.			

OWNER AUGUSTA COUNTY			JOB # RG00-848		BORING # B-5		SHEET 1 OF 1		
PROJECT NAME REGIONAL JAIL/JUVENILE DETENTION CENTER			ARCHITECT-ENGINEER MOSELEY HARRIS & McCLINTOCK						
SITE LOCATION AUGUSTA COUNTY GOVERNMENT CENTER, VERONA, VA									

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	DESCRIPTION OF MATERIAL	FINES (%)	ELEVATION (FEET)	CALIBRATED PENETROMETER O TONS/FT ²					
							1	2	3	4	5	
							WATER CONTENT ● (%)					
				SURFACE ELEVATION: 1281 aprx.								
0	1	SS	18	TOPSOIL (Very Stiff Brown Sandy SILTS (ML) with some finger roots)		1280		●	⊗			
	2	SS	18	Very Stiff Brown and Yellow Sandy Silty CLAYS (CL) - with dark brown weathered pockets				●	⊗			
4	3	SS	18	Stiff Gray and Brown Silty CLAYS (CH) - with some fine, weathered gravels		1276		⊗	●			
	4	SS	9	- greenish-gray and yellow with some coarse, weathered sand below 5 feet				●				
8				Hard Pale Gray SHALE								100 ⊗
	5	SS	2	Hard Dark Gray Weathered LIMESTONE - auger refusal at 9.2 feet		1272						75 ⊗
12						1268						
16						1264						
20						1260						
24						1256						
28						1252						

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU THE TRANSITION MAY BE GRADUAL		
WATER DEPTH IN BOREHOLE	BORING STARTED November 21, 2000	CAVE-IN DEPTH AT 5.0 ft
AFTER DRILLING Dry FT.	BORING COMPLETED November 21, 2000	DRILLING METHOD Hollow Stem Auger
AFTER HRS: FT.	DRILLER Ayers & Ayers, Inc.	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU THE TRANSITION MAY BE GRADUAL


WATER DEPTH IN BOREHOLE			BORING STARTED November 21, 2000			CAVE-IN DEPTH AT -		
AFTER DRILLING Dry FT.			BORING COMPLETED November 21, 2000			DRILLING METHOD Hollow Stem Auger		
AFTER HRS: FT.			DRILLER Ayers & Ayers, Inc.					

OWNER AUGUSTA COUNTY				JOB # RG00-848		BORING # B-8		SHEET 1 OF 1		
PROJECT NAME REGIONAL JAIL/JUVENILE DETENTION CENTER				ARCHITECT-ENGINEER MOSELEY HARRIS & McCLINTOCK						
SITE LOCATION AUGUSTA COUNTY GOVERNMENT CENTER, VERONA, VA										

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	DESCRIPTION OF MATERIAL	FINES (%)	ELEVATION (FEET)	CALIBRATED PENETROMETER O TOI					
							1	2	3	4	5	
							WATER CONTENT ● (%)					
				SURFACE ELEVATION: 1278 aprx.								
0	1	SS	18	FILL(?): 0.0-0.3 ft: ROOT MAT/TOPSOIL (Brown Sandy SILTS (ML))		1276		●	⊗			
	2	SS	18	0.3-1.0 ft: Stiff Orangish-Brown Sandy Silty CLAYS (CL)			⊗	●				
4	3	SS	3	1.0-4.0 ft: Stiff to Firm Pale Gray SHALE fragments with Brown and Gray CH Silty Clay binder and some fine to coarse gravels (base course aggregate?)		1272		●				
				Hard Wet Gray Weathered LIMESTONE								
8				- auger refusal at 5 feet								
						1268						
12												
						1264						
16												
						1260						
20												
						1256						
24												
						1252						
28												

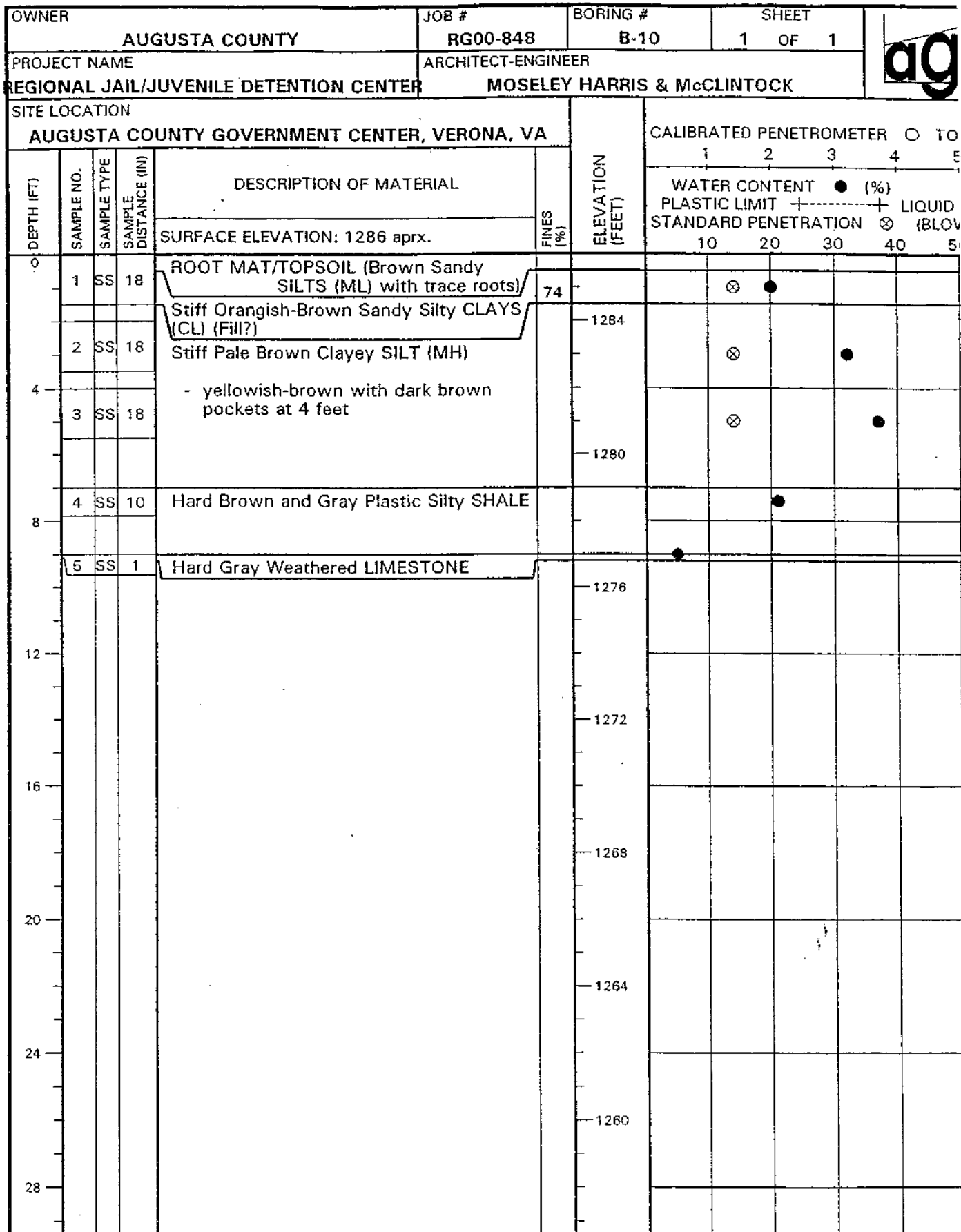
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU THE TRANSITION MAY BE GRAD

WATER DEPTH IN BOREHOLE		BORING STARTED November 21, 2000	CAVE-IN DEPTH AT 3.5 ft
AFTER DRILLING	4.0 FT.	BORING COMPLETED November 21, 2000	DRILLING METHOD Hollow Stem /
AFTER	HRS: FT.	DRILLER Ayers & Ayers, Inc.	


OWNER AUGUSTA COUNTY				JOB # RG00-848	BORING # B-9	SHEET 1 OF 1						
PROJECT NAME REGIONAL JAIL/JUVENILE DETENTION CENTER				ARCHITECT-ENGINEER MOSELEY HARRIS & McCLINTOCK								
SITE LOCATION AUGUSTA COUNTY GOVERNMENT CENTER, VERONA, VA												
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	DESCRIPTION OF MATERIAL	FINES (%)	ELEVATION (FEET)	CALIBRATED PENETROMETER ○ TONS/FT ²					
							1	2	3	4	5	
							WATER CONTENT ● (%)					
							PLASTIC LIMIT +-----+ LIQUID LIMIT					
							STANDARD PENETRATION ⊗ (BLOWS/FT.)					
							10	20	30	40	50	
0	1	SS	18	TOPSOIL (Stiff Brown Sandy SILTS (ML) with some finger roots)				⊗	●			
				Stiff Tan Sandy SILTS (ML)		1288						
	2	SS	18	- with trace finger roots				⊗	●			
				Stiff Tan Sandy Silty CLAYS (CL)								
4	3	SS	18	Very Stiff Pale Brown and Gray Clayey SILTS (ML)		1284			⊗	+●-----+		
				- with shaley partings								
	4	SS	7	Hard Pale Gray SHALE				●				100 ⊗
8				- very stiff, yellow and greenish-gray jointed CH silty clay layer at 9 feet								100 ⊗
	5	SS	9			1280			●			
12												
						1276						
16												
						1272						
20												
						1268						
24												
						1264						
28												

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU THE TRANSITION MAY BE GRADUAL

WATER DEPTH IN BOREHOLE		BORING STARTED November 21, 2000	CAVE-IN DEPTH AT 8.5 ft
AFTER DRILLING	Dry FT.	BORING COMPLETED November 21, 2000	DRILLING METHOD Hollow Stem Auger
AFTER	HRS: FT.	DRILLER Ayers & Ayers, Inc.	



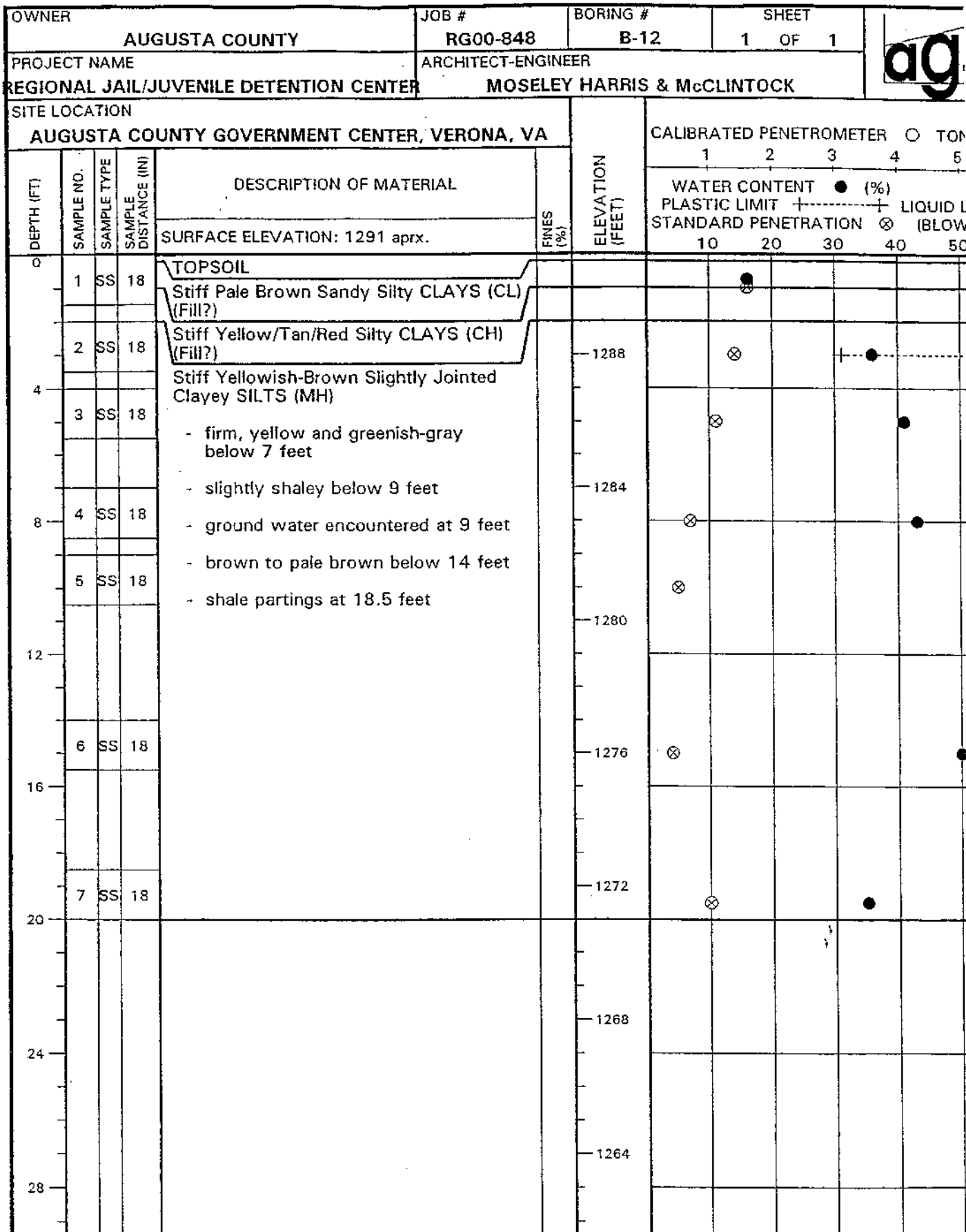
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU THE TRANSITION MAY BE GRAD					
WATER DEPTH IN BOREHOLE			BORING STARTED November 21, 2000		
AFTER DRILLING Dry FT.			BORING COMPLETED November 21, 2000		
AFTER HRS: FT.			DRILLER Ayers & Ayers, Inc.		
			CAVE-IN DEPTH AT -		
			DRILLING METHOD Hollow Stem /		

OWNER AUGUSTA COUNTY			JOB # RG00-848		BORING # B-11		SHEET 1 OF 1		
PROJECT NAME REGIONAL JAIL/JUVENILE DETENTION CENTER			ARCHITECT-ENGINEER MOSELEY HARRIS & McCLINTOCK						
SITE LOCATION AUGUSTA COUNTY GOVERNMENT CENTER, VERONA, VA									

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	DESCRIPTION OF MATERIAL	FINES (%)	ELEVATION (FEET)	CALIBRATED PENETROMETER O TONS/FT ²					
							1	2	3	4	5	
							WATER CONTENT ● (%)					
				SURFACE ELEVATION: 1280 aprx.			PLASTIC LIMIT +-----+ LIQUID LIMIT STANDARD PENETRATION ⊗ (BLOWS/FT.)					
							10	20	30	40	50	
0	1	SS	18	Firm Dark Brown to Dark Gray Organic Slightly Sandy SILT (Pt) (Topsoils?)		1280	⊗					●
	2	SS	18	Firm Dark Brown to Dark Gray Clayey SILTS (MH)			⊗		●			
4				- with some roots and fine to medium gravels		1276						
	3	SS	18	Firm Gray and Orangish-Brown Silty CLAYS (CH)					⊗	●		
				- very stiff, slightly jointed, yellowish-brown and gray with shaley partings at 4 feet								
8	4	SS	11	Hard Black Weathered SHALE		1272	●					⊗ → 100
				- with intermittent gray seams								
				- auger refusal at 8 feet								
12						1268						
16						1264						
20						1260						
24						1256						
28						1252						

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU THE TRANSITION MAY BE GRADUAL

WATER DEPTH IN BOREHOLE			BORING STARTED November 21, 2000		CAVE-IN DEPTH AT -	
AFTER DRILLING	Dry	FT.	BORING COMPLETED November 21, 2000		DRILLING METHOD Hollow Stem Auger	
AFTER	HRS:	FT.	DRILLER Ayers & Ayers, Inc.			



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES: IN-SITU THE TRANSITION MAY BE GRADUAL

WATER DEPTH IN BOREHOLE	BORING STARTED November 21, 2000	CAVE-IN DEPTH AT 2.5 ft
AFTER DRILLING 17.5 FT.	BORING COMPLETED November 21, 2000	DRILLING METHOD Hollow Stem A
AFTER HRS: FT.	DRILLER Ayers & Ayers, Inc.	

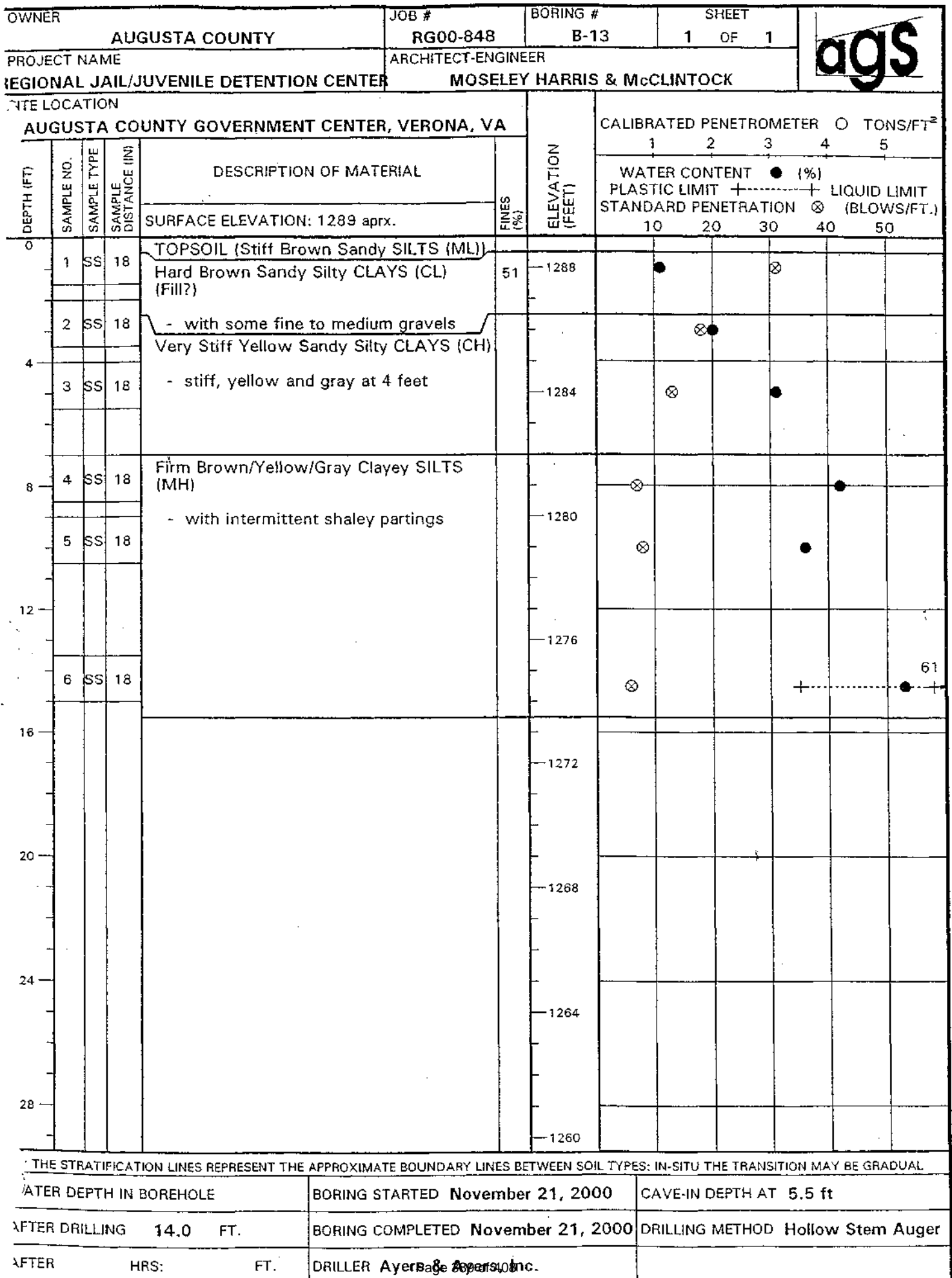


Figure 15

SECTION III



Draper Aden Associates

Blacksburg • Richmond, Virginia
Engineering • Surveying • Environmental Services

March 1, 2001

Mr. Cary Gill, AIA
Vice President
Mosely, Harris & McClintock
601 Southlake Boulevard
Richmond, Virginia 23236

RECEIVED

MAR 05 2001

MOSELEY HARRIS &
McCLINTOCK

Re: Subsurface Investigation and Media Management Cost Estimation
Augusta/Staunton/Waynesboro Regional Jail
Augusta County Government Center, Verona, Virginia
DAA Project Number B00358

Dear Mr. Gill:

The purpose of this letter is to report the findings of the subsurface investigation and media management cost estimation for the referenced site. The subsurface investigation was conducted in the "suspect area" as identified on the Mosely Harris & McClintock drawing for the site titled "Concept A1" dated November 16, 2000 and in the attached Figure 1. The media management cost estimation outlines the potential costs associated with management of petroleum-impacted water and soil should they be encountered during the construction of the proposed courts building and jail.

Investigation of "Suspect Area"

The "suspect area" is located in the southern portion of the site and in the area of the former trucking company tenant's employee parking area. The "suspect area" is bordered to the west and south by an unnamed intermittent tributary to the Middle River. Based on previous investigations and conversations with Mr. John McGehee, Solid Waste Director and Assistant County Administrator for Augusta County, a subsurface investigation was warranted. Mr. McGehee reported that the "suspect area" ground surface contained areas of construction type debris.

On February 16, 2001 Draper Aden Associates (DAA) personnel visited the "suspect area" and flagged surface depressions and debris piles. Surface depressions were selected because they may be the result of the type of differential settling that may be the result of improper waste disposal. Vegetation in the "suspect area" was relatively sparse and allowed an unobstructed view of the ground surface. DAA personnel flagged a total of 21 surface depressions and/or debris piles. Backhoes were used to excavate a test pit at each of the flagged points. Trenches were excavated in areas where several flagged points were closely spaced. The test pits and trenches were excavated to a depth of approximately five feet below ground surface. Test pit and trench locations are depicted in Figure 1. The soils excavated from each test pit and the excavation walls were observed

for signs of improper waste disposal. Test pit logs are presented in Table 1. The majority of the test pits contained cement and asphalt construction debris. A crushed and empty 55-gallon steel drum was observed near the southwest portion of the "suspect area". No soil staining was observed in the vicinity of the drum. A soil sample was collected from directly beneath the drum and approximately 6 inches below ground surface. The soil sample was screened with a photoionization detector (PID). The PID uses a photoionization detector to quantitate volatile organic compound concentrations in the headspace above the soils. Based on the failure of the soil sample to register a PID reading, laboratory analysis of the soil sample was not conducted.

Coordination of Environmental Data with Conceptual Building Plan

Figure 1 depicts the current site buildings and the proposed additional buildings. The proposed building locations are based on the Mosely Harris & McClintock drawing for the site titled "Concept A1" dated November 16, 2000. Based on the location of the proposed jail, proposed courts building, and the connection that will join the two, it is apparent that excavation may encounter petroleum-impacted soil and groundwater.

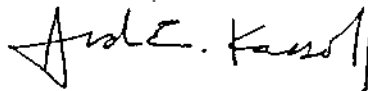
Petroleum-impacted soil and groundwater may exist in the area of the former wastewater treatment plant. As such, DAA has prepared an estimate of potential costs associated with the management of the petroleum-impacted media. Since soil removal in the area of the former wastewater treatment plant will be conducted regardless of petroleum impact, the cost estimation for petroleum-impacted soil management only includes costs associated with the transport and disposal of the soil, not excavation. Based on the footprint of the former wastewater treatment plant, a maximum estimated volume of 325 tons of potentially petroleum-impacted soils may reside in the area of future construction. The transportation and disposal costs associated with this amount of petroleum-impacted soil would range from \$22,000–\$30,000. Groundwater withdrawn from the site prior to construction may also be petroleum-impacted. The cost of groundwater management would include the cost of temporary on-site storage, water sampling, and discharge to the sanitary sewer system on-site. An estimate of the quantity of potentially petroleum-impacted groundwater that may be encountered was calculated using the attached analytical model. The primary reference used in the development of the model was *Construction Dewatering, J. P. Powers, Second Edition, John Wiley and Sons, 1992*. Previous work at the former wastewater treatment plant resulted in the transport of petroleum-impacted water to the Middle River Wastewater Treatment Plant, however current conditions will allow for the potential to discharge of petroleum-impacted water to the sanitary sewer on-site. However, to discharge the water to the sanitary sewer, the water must be sampled and temporarily stored pending laboratory results prior to discharge. The range of estimated costs associated with the storage, water sampling, and disposal of petroleum-impacted water is \$5,500–\$10,000.

Mr. Gill
March 1, 2001
Page 3

It is reasonable to assume that management of the water may not be required. Impacts to groundwater in the vicinity of the former wastewater treatment plant are very minor (1.5 mg/L of Total Petroleum Hydrocarbons – TPH). Therefore, it is likely that the construction dewatering flows will not require management. The cost estimate presented here is provided to quantify the financial impacts of a worst case scenario. Similarly the actual volume of impacted soils may be significantly less than the volume calculated here.

On behalf of Draper Aden Associates, thank you for the opportunity to be of service to you. Please feel free to contact me should you have any questions or require additional information.

Sincerely,
DRAPER ADEN ASSOCIATES



Andrew E. Kassoff, P.G.
Environmental Program Manager

Attachments: Figure 1
Table 1
Dewatering Calculations

cc: Gary P. Phillips, EIT, Project Engineer, DAA

Table 1

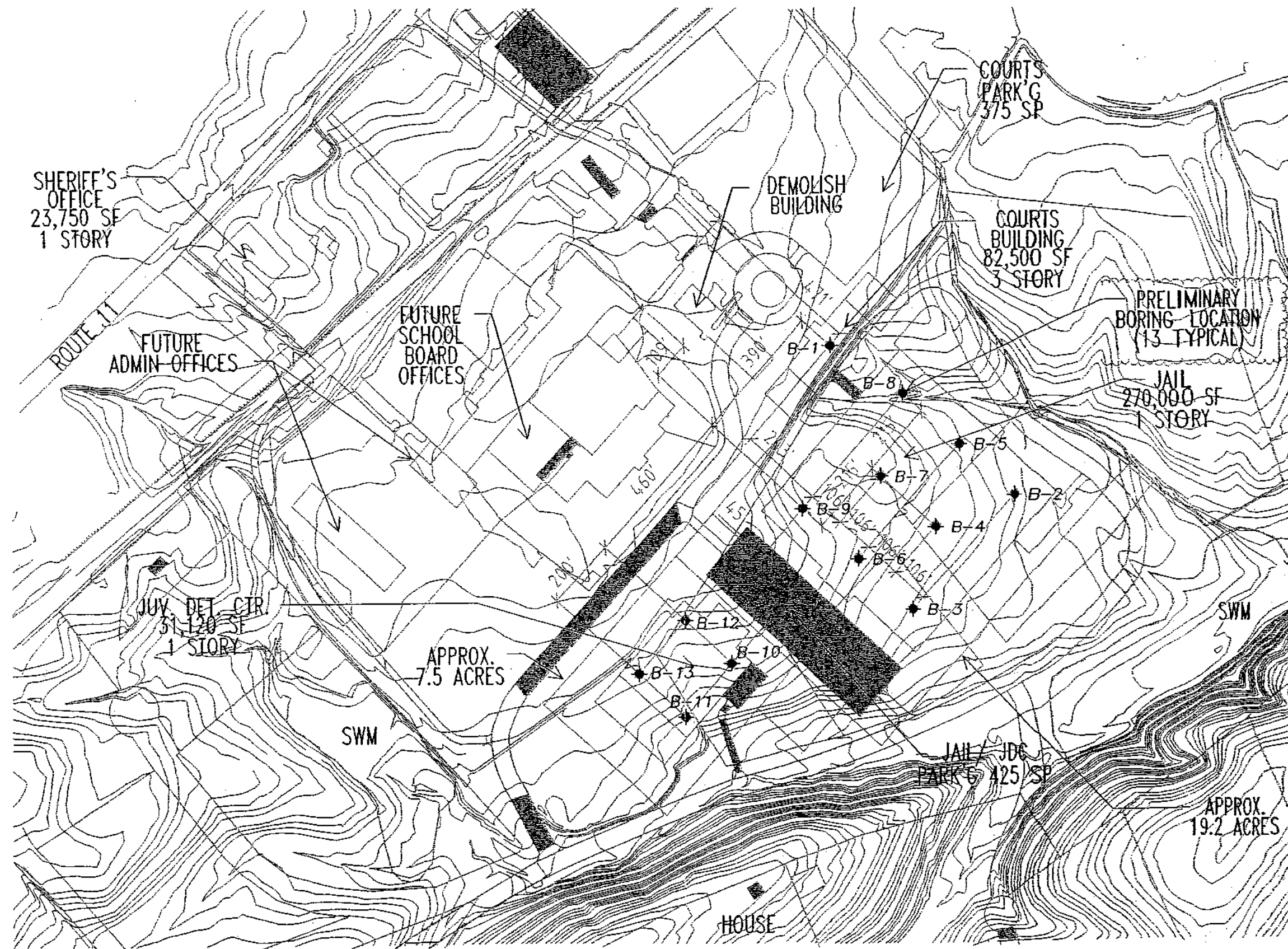
Middle River Regional Jail
Augusta County Government Center
Environmental Management Services Associated with Geotechnical Study
DAA Project Number B02356-01

Boring	PID (ppm)	Notes
B-10	0	no apparent odor or stain
B-11	0	no apparent odor or stain
B-12	0	no apparent odor or stain
B-13	0	no apparent odor or stain
B-14	0	no apparent odor or stain
B-15	0	no apparent odor or stain
B-16	0	no apparent odor or stain
B-17	0	no apparent odor or stain
B-18	0	no apparent odor or stain
B-19	0	no apparent odor or stain
B-20	0	no apparent odor or stain
B-21	0	no apparent odor or stain
B-22	0	no apparent odor or stain
B-23	0	asphalt at 2' - no apparent odor or stain
B-24	0	no apparent odor or stain
B-25	0	no apparent odor or stain
B-26	0	no apparent odor or stain
B-27	0	no apparent odor or stain
B-28	0	no apparent odor or stain
B-29A	0	no apparent odor or stain
B-30	0	no apparent odor or stain
B-31	0	no apparent odor or stain
B-34	0	no apparent odor or stain
B-35	0	no apparent odor or stain
B-36	0	no apparent odor or stain
B-35	0	no apparent odor or stain
B-37	0	no apparent odor or stain
B-38	0	no apparent odor or stain
B-39	0	no apparent odor or stain
B-40	0	no apparent odor or stain
B-41	0	no apparent odor or stain
B-42	0	no apparent odor or stain
B-43	0	no apparent odor or stain
B-44	0	no apparent odor or stain
B-45	0	no apparent odor or stain
B-46	0	no apparent odor or stain
B-47	0	no apparent odor or stain
B-48	0	no apparent odor or stain
B-49	0	no apparent odor or stain
B-50	0	no apparent odor or stain
B-51	0	no apparent odor or stain
B-52	0	no apparent odor or stain
B-53	0	no apparent odor or stain
B-54	0	no apparent odor or stain
B-55	0	no apparent odor or stain
B-56	0	no apparent odor or stain
B-57	0	no apparent odor or stain
B-58	0	no apparent odor or stain
B-59	0	no apparent odor or stain
B-60	0	no apparent odor or stain
B-61	0	no apparent odor or stain
B-62	0	no apparent odor or stain
B-63	0	no apparent odor or stain
B-64	0	no apparent odor or stain
B-65	0	no apparent odor or stain
B-66	0	no apparent odor or stain
B-68	0	no apparent odor or stain
B-69	0	no apparent odor or stain
B-70	0	no apparent odor or stain
B-71	0	no apparent odor or stain
B-72	0	no apparent odor or stain
B-73	0	no apparent odor or stain
B-74	0	no apparent odor or stain
B-75	0	no apparent odor or stain
B-76	0	no apparent odor or stain
B-77	0	no apparent odor or stain
B-78	0	no apparent odor or stain
B-82	0	gray clay seam caused "sheen like" appearance - no apparent odor
B-83	0	no apparent odor or stain
B-84	0	no apparent odor or stain
B-85	0	no apparent odor or stain
B-101	0	no apparent odor or stain, piezometer installed
B-102	0	no apparent odor or stain, piezometer installed

Table 1. Test Pit Logs

Test Pit ID	Reason for Excavation	Subsurface Contents
TP-1	Surface Depression	Native Soil
Soil Pile	Surface Debris	Gravel
TP-2	Surface Debris	Gravel and Clay
TP-3	Surface Depression	Native Soil
TP-4	Construction Debris at Surface	Cement and Asphalt
TP-5	Surface Depression	Asphalt
TP-6	Surface Depression	Native Soil
TP-7	Surface Depression	Clay
TP-8	Debris Pile	Cement with Rebar
TP-9	Surface Depression	Asphalt and Bricks
TP-10	Surface Debris	Cement and Bricks
TP-11	Surface Depression	Cement and Asphalt
TP-12	Surface Debris	Asphalt
TP-13	Surface Debris	Cement and Asphalt
TP-14	Surface Debris	Cement and Asphalt
TP-15	Surface Depression	Native Soil
TP-16	Surface Depression	Native Soil
Trench-1	Surface Debris	Native Soil
Trench-2	Surface Debris	Native Soil

Test pit table.xls



LEGEND

◆ B-1 SOIL BORING LOCATION AND DESIGNATION

PLAN OF BORINGS

SCALE: 1" = 300'-0"

**REGIONAL JAIL
AND
JUVENILE DETENTION CENTER**
AUGUSTA COUNTY, VIRGINIA

FIGURE 2

SECTION IV



Draper Aden Associates

Engineering • Surveying • Environmental Services

2206 South Main Street
Blacksburg, Virginia 24060
(540) 552-0444 • Fax (540) 552-0291
daa@daa.com • www.daa.com

January 9, 2003

COPY
RECEIVED

MAY 19 2003

HEERY INTERNATIONAL, INC.
LANDOVER, MD

Mr. John McGehee
Deputy County Administrator
Augusta County
18 Government Center Lane
Verona, Virginia 24482

Re: Environmental Management Services Associated with
Middle River Regional Jail Geotechnical Investigation
Augusta County Government Center, Verona, Virginia
DAA Project Number B02358-01

Dear Mr. McGehee:

The purpose of this letter is to report the environmental findings of the environmental due diligence investigation for the referenced site. The subsurface investigation was conducted in coordination with the structural geotechnical study by Zammino Engineering.

Environmental Investigation

Draper Aden Associates (DAA) personnel observed 73 borings drilled by Fishburn Drilling from January 2, 2003 to January 8, 2003. A matrix layout of borings covered all areas south of the Government Center parking area, southwest to the construction of the Juvenal Detention center, northeast to an unnamed intermittent tributary to the Middle River, and south to the Middle River. All borings were observed for potential petroleum or other contamination. A photo-ionization detector (PID) was used to evaluate the presence or absence of volatile organic compounds (VOC). Any potential contamination was to be recorded by thickness of impacted soil, PID reading, and visual observation. Samples were to be collected for appropriate laboratory analysis, and impacted soil was to be stored onsite.

Attached are Table 1 and field notes for each boring. Boring B-82 contained a gray clay seam of colloidal clay material which resulted in a "sheen like" appearance on the surface of the groundwater. Laboratory analysis was unnecessary due to failure to register a PID reading for VOC and had no petroleum odor. All other boring cuttings and split spoon samples had no observations of petroleum or other contaminants beyond lubricants used by drillers. Results from these observations determined that no further laboratory analysis was necessary.

Conclusions and Recommendations

Observations of 73 borings covering the proposed construction area found no substantial contamination beyond minor asphalt and debris. Results from this site investigation indicate no likely subsurface contamination exists. Previous investigations show impacts to groundwater in the vicinity of the former wastewater treatment plant are very minor (1.5 mg/L of Total Petroleum Hydrocarbons - TPH), and recent borings in the same locations resulted in no detection of Petroleum. Therefore, it is likely that the construction dewatering flows will not require management. It is recommended that no further investigation is necessary for the Middle River Regional Jail site.

On behalf of Draper Aden Associates, thank you for the opportunity to be of service to you. Please feel free to contact me should you have any questions or require additional information.

Sincerely,
DRAPER ADEN ASSOCIATES



Andrew E. Kassoff, P.G.
Environmental Program Manager

Attachments: Table 1
Field Notes

C. RESOLUTION



MIDDLE RIVER REGIONAL JAIL

Serving Staunton, Waynesboro, Harrisonburg and
the Counties of Augusta and Rockingham

July 6, 2021

Honorable Vernie W. Francis, Jr.
Chairman, Board of Local and Regional Jails
6900 Atmore Drive
Richmond, Virginia 23225

SUBJECT: Middle River Regional Jail Authority (MRRJA) Community Based Corrections Plan Changes

Honorable Mr. Francis,

The Middle River Regional Jail (MRRJ) staff, Authority Board members, and local elected officials and staff have for years urged the Virginia Department of Corrections to transfer state-responsible inmates to state facilities in a more consistent and timely manner. While we have recently experienced unprecedented success in that regard – the system is still slow and unpredictable. MRRJA will continue to work with DOC toward creating a more predictable and sustainable transfer process in order to help reduce the overall inmate population at the jail.

Additionally, it is unknown at this time if Criminal Justice Reforms enacted by the Commonwealth in the recent Virginia General Assembly sessions will substantively impact current and future local and regional jail populations. The MRRJA is not prepared at this time to invest in additional inmate bed space until the impact of these criminal justice reform initiatives can be assessed further as to their specific impact on the average daily inmate population of MRRJ.

However, MRRJ does require modifications to existing core facilities to provide to better service to the current inmate population. This need is independent of any projected growth in inmate numbers. MRRJ has been operating at greater than 200% of rated capacity; while recent transfers to VADOC have reduced the MRRJ average daily population there is no guarantee the population will remain at a manageable level.

In the meantime, the MRRJA Board feels strongly that it has an obligation to ensure those placed in the care of MRRJ are housed in a humane and dignified manner with the appropriate support services available, particularly in the areas of healthcare and behavioral healthcare. The MRRJ facility, without significant modifications, is not anticipated to be able to continue to meet that obligation and it is our duty to address these issues. Therefore, I respectfully submit the attached (i) the motion approved by the MRRJA Board to formally modify the original project scope and (ii) the proposed modifications to the previously approved Community Based Corrections Plan for the Board's consideration and approval.

Sincerely,

Stephen King, Chairman

Enclosures:
MRRJA Motion to proceed June 1, 2021
Amended Community Based Corrections Plan

CC: Mr. Bob Casey
File



MIDDLE RIVER REGIONAL JAIL

Serving Staunton, Waynesboro, Harrisonburg and
the Counties of Augusta and Rockingham

Motion: I (Tim Fitzgerald, Augusta County Administrator) move that the Middle River Regional Jail Authority Board approve a revised capital improvement project as described below:

Focus on repairing and updating the existing facility.

This motion, if approved, would only authorize the Superintendent to engage bond counsel and financial advisors, as necessary, and to contract with Mosely Architects for the formal design and project management services on behalf of the Authority, subject to member locality approval as required by the Middle River Regional Jail Authority Service Agreement. While significantly reduced in scope from the initial project under consideration, this project is targeted to meet the Jail's most urgent needs, and is supported by the Community Based Corrections Plan previously approved by this Board and by the State Board of Local and Regional Jails. It is not intended to allow for additional beds.

Renovation of existing facility

1. Water Heater Upgrade
2. Lighting Upgrade
3. Improve approximately 150 square feet of Lobby Security
4. Build out approximately 1,576 square feet of additional Professional visitation
5. Renovate approximately 2,891 square feet of Mental Health Office Space.

Additional/New Support Services

1. Construct approximately 13,500 square feet of Inmate Medical Unit
2. Construct approximately 2,100 square feet for Inmate Laundry
3. Add approximately 6,200 square feet of Additional Administrative Space
4. Add approximately 3,100 square feet of Food Service Space
5. Add approximately 4,200 square feet of Warehouse Space

It is anticipated that this work would not exceed **\$14.5 million**, in costs, plus issuance costs and any additional debt service reserve and or operating reserve required from the lending authority.

With this motion I request that Jail Administration confirm with the state that the 25% state funding that is in the state budget will apply to this project concept.

Seconded: Trish Davidson, Finance Director County of Rockingham

Motion passed: 10 voting in favor of the motion with 3 abstentions.


Stephen King, Chairman

350 Technology Drive • Staunton, Virginia 24401 • Telephone: 540.245.5420 • Fax: 540.245.5232